TABLE 2-1
WOC Facility Ownership

Period	Owner	Operator	Type of Operation	Comments
Prior to 1957				Agricultural land
8/57 to 5/59	Andrew P. and Mary J. Tell			
5/59 to 7/59	U.S. Electronics Development Corporation (U.S. EDCOR) of California	U.S. EDCOR of Arizona	Production of film capacitors, diodes	Filed bankruptcy
7/59 to 7/60	United Industrial Corporation (UIC)	U.S. Semiconductor Products Division of UIC	Production of tantalum capacitors, diodes	Topp Industries purchased assets and property in mid-1959; merged as UIC in 12/59
7/60 to 5/62	U.S. Semiconductor Products, Inc.	U.S. Semiconductor Products, Inc. (Arizona, new) as a subsidiary of UIC	Production of tantalum capacitors, diodes	U.S. Semiconductor Products was a wholly-owned subsidiary of UIC until 9/60, when UIC reduced its ownership to 10.62%
5/62 to 4/62	Nucor Corporation	U.S. Semcor, a subsidiary of Nucor Corporation (formerly Nuclear Corporation of America)	Production of tantalum capacitors, diodes and rare earth metal crystals such as selenium, borium, and gallium	Nucor purchased in May 1961 89.38% of total outstanding shares of U.S. Semiconductor Products common stock from UIC
4/62 to 10/65		U.S. Semcor, a Division of Nucor Corporation	Production of tantalum capacitors, diodes and rare earth metal crystals such as selenium, borium, and gallium	In April 1962, Nucor acquired the remaining shares of U.S. Semiconductor Products common stock
10/65 to 6/71	Components, Inc. (old)	Semcor Division of Components, Inc. (old)	Production of tantalum capacitors, diodes and transistors	Components, Inc. (old) purchased the property from Nucor Corporation
6/71 to 10/76	Corning Glass Works	Components, Inc. (new)	Apparently, production of tantalum capacitors, diodes and silicon wafers	Corning Glass Works purchased the property from Components, Inc. (old) through a pooling-of-interest Components (new) was a wholly-owned subsidiary of Corning Glass Works

Period	Owner	Operator	Type of Operation	Comments
1976 to 1978	Corning Glass Works sold the property in three separate parcels:			
Middle Parcel (Parcel 107-33-31Q)				
10/76 to 2/79	Marbar Corporation	Lansdale Transistor & Electronics, Inc. (Nevada)	Production of transistors and semiconductors	Lansdale Transistor & Electronics, Inc. (Nevada) leased the property and facilities; this company was controlled by the Pincus family
2/79 to 1/83		Lansdale Transistor & Electronics, Inc. (Delaware)	Production of transistors and semiconductors	Walter Kidde & Company leased the property and facilities under the name of Lansdale Transistor & Electronics, Inc. (Delaware)
1/83 to 12/86		Lansdale Transistor & Electronics, a Division of Electronic Technologies, Inc. (12/86 to 2/87)	Production of transistors and semiconductors	Walter Kidde & Company was acquired by Hanson Industries in 1987 and sold operating assets to Electronics Technologies, Inc. (Delaware)
12/86 to 12/88	Lenore U. Pincus, Trustee of the Pincus Family Trust			
12/88 to 12/92	Lenore U. Pincus, Trustee of the Lenore U. Pincus Family Trust	Lansdale Semiconductor, Inc. (2/87 to 12/92)	Production of transistors and semiconductors	Operations acquired by Lansdale Semiconductors, Inc. (Delaware), a corporation 100% owned by R. D. Lillard
12/92 to Present	Charles Delaney	Capital Liquidators (12/92 to 12/99)	Furniture liquidation	
		Capital Sleep & Sofa (2003 to 2006)	Mattress refurbishing and sales	
		Furniture Sales and Auction (2006 to Present)	Auctioning and sales of used furniture	
East Parcel (Parcel 107-33-31R)				
11/76 to 9/02	Eugene R. Perri and Laura L. Perri	Western Dynex, Inc.	Disc-drive assembler for minicomputers	Eugene Perri was president for Western Dynex, Inc.
9/02 to Present	The Seven Angels, LLC	Industrial Chassis, Inc.	Hot Rods / Custom Car Fabrication and Repair	

Period	Owner	Operator	Type of Operation	Comments
West Parcel (Parcels 107-33-31, U through Z, 107-33-394, and 107-33-134)				
6/78 to 2/00	Charles G. May	May Industries, Inc., Metal Joining, Arizona Textile, Arizona Mail Orders, Tumbleweeds, Aztec Chemical, Jazzercise	May Industries, Inc. was a precision machine shop for aerospace industry	Five multiple-tenant office buildings and two industrial buildings Parcel 107-33-31X was owned by Charles G. and Estrella L. May Northeast parcel was owned by Gloria Chestnut
2/00 to Present	Elm Properties, LLC	Intrepid Tool Industries (APN 107-33-031U) Choice Printing, Inc. (APN 107-33-031 V and W) Ellison Surface Technologies (APN 107-33-394; former APN 107-33-031X and Y) BT Moulding (APN 107-33-031Z) Pfeifer Manufacturing (APN 107-33-134)	Intrepid Tool Industries – Carbide Tool Design and Manufacturing Choice Printing, Inc – Printing and Binding Services Ellison Surface Technologies – Thermal Spray Coatings BT Moulding – Moulding Fabrication Pfeifer Manufacturing – Sheet Metal Fabrication and Cutting;	Five multiple-tenant office buildings and two industrial buildings Northeast parcel was owned by Gloria Chestnut until April 2000, when it was sold to Elm Properties, LLC Parcels 107-33-031X and Y no longer valid APNs.

Sources: 1. ADEQ, 1989b.
2. BCC, 1992.
3. All Lands Title, 1996.
4. GeoTrans, 2004.
5. Maricopa County Assessor's Website, 2011.

TABLE 2-2

MONITORING WELL CONSTRUCTION DETAILS
West Osborn Complex WQARF Site, Phoenix, Arizona

Well ID	ADWR 55 - Number	Surveyed Measuring Point (feet amsl)	Diameter (inches)	Total Depth of Borehole (feet bgs)	Screened Interval (feet bgs)
SGWG (Shallow) Monitor Wells					
MW-1S	532636	1109.45	4	130	90 - 130
MW-2S	532372	1107.83	4	120	90 - 120
MW-3S	532373	1109.34	4	100	55 - 95
MW-3SR	907557	1110.62	4	190	132 - 182
MW-4S	534122	1107.64	4	125	85 - 125
MW-5S	534123	1108.05	4	135	95 - 135
MW-6S	558699	1098.35	4	125	80 - 120
MW-7S	558664	1105.22	4	108	63 - 103
MW-100S	562004	1106.62	5	146	87 - 137
MW-101S	563318	1107.34	5	151.5	90 - 140
MW-102S	564733	1106.02	4	135	95 - 135
MW-102SR	907556	1105.71	4	175	130 - 175
MW-103S	564982	1100.81	4	130	90 - 130
MW-104S	564984	1100.36	4	135	65 - 135
MW-201S	571594	1095.26	4	139	98 - 138
MW-202S	902161	1100.76	4	170	130 - 165
MW-203S	902164	1094.45	4	168	123 - 163
MW-204S	902165	1092.35	4	170	130 - 165
MW-205S	902166	1097.20	4	170	130 - 165
MW-206S	904092	1082.55	4	227	132 - 202
MW-207S	904093	1088.79	4	181	131 - 171
MW-208S	907555	1076.40	4	210	137 - 177
MW-209S	907554	1075.82	4	175	130 - 175
ARCO-MW2	536034	1097.75	4	145	99 - 139
WCP-204	589528	1097.47	4	151	110 - 150
WCP-207	901266	1106.33	NR	166	120 - 165
LSGS (Middle) Monitor Wells					
MW-2M	558431	1106.48	8	370	330 - 370
MW-3M	558432	1111.34	8	290	250 - 290
MW-4M	558433	1107.28	8	285	245 - 285
MW-6M	558697	1098.16	4.5	365	325 - 365
MW-7M	558665	1107.86	8	305	260 - 300
MW-102M	564732	1108.14	4	450	340 - 380
MW-105M	564985	1101.39	4	360	320 - 360
MW-106M	564731	1109.25	4	325	280 - 320
MW-107M	585080	1095.95	4	345	305 - 340
MW-108M	590468	1089.13	4	420	300 - 340
MW-109M	594742	1086.79	4	365	320 - 365
MW-110M	594741	1099.01	4	340	295 - 340
MW-203M	902167	1094.64	4	410	360 - 400
MAU (Lower) Monitor Wells					
MW-4L	558430	1110.34	8	810	770 - 810
MW-6L	558698	1100.85	4.5	820	740 - 780
MW-7L	558666	1107.92	8	820	755 - 795

Notes:
ADWR = Arizona Department of Water Resources
NR = Not reported
bgs = below ground surface

Table 3-1
SUMMARY OF HISTORICAL VOC ANALYTICAL DATA FOR SGWS AND LSGS MONITORING WELLS
WEST OSBORN COMPLEX WQARF SITE, PHOENIX, ARIZONA

Analytical Results for Selected Volatile Organic Compounds								
Well ID	**Date Sampled**	**PCE (µg/L)**	**TCE (µg/L)**	**cis-1,2-DCE (µg/L)**	**trans-1,2-DCE (µg/L)**	**1,1-DCE (µg/L)**	**Vinyl Chloride (µg/L)**	**Chloroethane (µg/L)**
Aquifer Water Quality Standard (µg/L)		**5**	**5**	**70**	**100**	**7**	**2**	**NE**
MW-1S	11/18/96	<0.50	**19**	<0.50	<0.50	<0.50	<0.50	<0.50
	02/10/97	<0.50	**17**	<0.50	<0.50	<0.50	<0.50	<0.50
	05/05/97	<0.50	**27**	<0.50	<0.50	<0.50	<0.50	<0.50
	08/05/97	0.7	**73**	<0.50	<0.50	1.3	<0.50	<0.50
	11/18/97	<1.3	**58**	<1.3	<1.3	<1.3	<1.3	<1.3
	02/17/98	<1.25	**65**	<1.25	<1.25	1.6	<1.25	<1.25
	05/26/98	<1.25	**37**	<1.25	<1.25	<1.25	<1.25	<1.25
	08/25/98	<0.5	**45**	<0.5	<0.5	1.20	<0.5	<0.5
	11/09/98	<1.0	**46**	<1.0	<1.0	<1.0	<1.0	<1.0
	02/16/99	0.58	**39**	<5.0	<5.0	0.95	<5.0	<5.0
MW-2S	11/19/96	<0.50	1.6	<0.50	<0.50	<0.50	<0.50	<0.50
	02/11/97	<0.50	3.5	<0.50	<0.50	<0.50	<0.50	<0.50
	05/07/97	<0.50	1.7	<0.50	<0.50	<0.50	<0.50	<0.50
	08/04/97	<0.50	2.0	<0.50	<0.50	<0.50	<0.50	<0.50
	11/18/97	<0.50	2.9	<0.50	<0.50	<0.50	<0.50	<0.50
	02/13/98	<0.50	1.8	<0.50	<0.50	<0.50	<0.50	<0.50
	05/21/98	<0.50	**9.90**	<0.50	<0.50	<0.50	<0.50	<0.50
	08/27/98	<0.50	0.92	<0.50	<0.50	<0.50	<0.50	<0.50
	11/10/98	<0.50	0.99	<0.50	<0.50	<0.50	<0.50	<0.50
	02/16/99	<0.50	2.40	<0.50	<0.50	<0.50	<0.50	<0.50
MW-3S	11/19/96	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
	02/11/97	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
	05/07/97	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
	08/05/97	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
	11/18/97	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
	02/13/98	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
MW-3SR	10/29/07	**12**	**250**	3.1	<0.50	**41**	<0.50	<5.0
	12/19/07	**12**	**380**	3.3	<1.0	**54**	<1.0	<10
	05/01/08	**8.1**	**230**	<2.0	<1.0	**20**	<1.0	<10
	09/03/08	**5.9**	**170**	<2.0	<1.0	**21**	<1.0	<10
	12/18/08	**7.2**	**220**	<4.0	<2.0	**31**	<2.0	<20
	03/09/09	3.7	**170**	1.7	<0.50	**27**	<0.50	<5.0
	09/10/09	4.9	**120**	1.9	<0.50	**14**	<0.50	<5.0
	09/16/10	<1.0	**160**	<2.0	<1.0	**28**	<1.0	<10
	09/16/11	**10**	**180**	<2.0	<1.0	**22**	<1.0	<10
MW-4S	11/18/96	<25	**340**	<25	<25	<25	<25	<25
	02/05/97	4.5	**130**	<2.5	<2.5	3.7	<2.5	<2.5
	05/06/97	<25	**600**	<25	<25	<25	<25	<25
	08/04/97	**18**	**480**	<10.0	<10.0	**11**	<10.0	<10.0
	11/17/97	**5.5**	**170**	<5.0	<5.0	<5.0	<5.0	<5.0
	02/11/98	<1.0	**25**	<1.0	<1.0	<1.0	<1.0	<1.0
	05/26/98	<0.50	**7.2**	<0.50	<0.50	<0.50	<0.50	<0.50
	08/28/98	<0.50	**15**	<0.50	<0.50	<0.50	<0.50	<0.50
	11/11/98	<0.50	4.9	<0.50	<0.50	<0.50	<0.50	<0.50
	02/18/98	0.79	**14**	<0.50	<0.50	<0.50	<0.50	<0.50
MW-5S	11/18/96	<25	**480**	<25	<25	**86**	<25	<25
	02/07/97	**7.5**	**230**	<5.0	<5.0	**41**	<5.0	<5.0
	05/05/97	<10	**230**	<0.50	<0.50	**33**	<0.50	<0.50
	08/04/97	**6.0**	**140**	1.4	<0.50	**29**	<0.50	<0.50
	11/13/97	3.4	**97**	<2.5	<2.5	**14**	<2.5	<2.5
	02/17/98	3.6	**96**	<2.5	<2.5	**18**	<2.5	<2.5
	05/21/98	1.40	**39**	<2.5	<2.5	6.4	<2.5	<2.5
	08/28/98	<2.5	**110**	<2.5	<2.5	**10**	<2.5	<2.5
MW-5S	11/09/98	3.30	**110**	<2.5	<2.5	**8.7**	<2.5	<2.5

Table 3-1
SUMMARY OF HISTORICAL VOC ANALYTICAL DATA FOR SGWS AND LSGS MONITORING WELLS
WEST OSBORN COMPLEX WQARF SITE, PHOENIX, ARIZONA

Analytical Results for Selected Volatile Organic Compounds								
Well ID	**Date Sampled**	**PCE (µg/L)**	**TCE (µg/L)**	**cis-1,2-DCE (µg/L)**	**trans-1,2-DCE (µg/L)**	**1,1-DCE (µg/L)**	**Vinyl Chloride (µg/L)**	**Chloroethane (µg/L)**
Aquifer Water Quality Standard (µg/L)		**5**	**5**	**70**	**100**	**7**	**2**	**NE**
(cont)	02/19/99	4.50	**91**	<2.5	<2.5	**16**	<2.5	<2.5
	06/08/01	2	**100**	7	<0.2	5	<0.2	<0.2
	03/07/02	2.1	**75**	2.2	<0.50	3.4	<0.50	<0.50
MW-6S	11/20/96	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
	02/07/98	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
	05/05/97	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
	08/05/97	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
	11/17/97	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
	02/11/98	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
	05/19/98	<0.50	1.00	<0.50	<0.50	NA	<0.50	<0.50
	08/21/98	<0.50	<0.50	<0.50	<0.50	NA	<0.50	<0.50
	11/05/98	<0.50	<0.50	<0.50	<0.50	NA	<0.50	<0.50
	02/09/99	<0.50	<0.50	<0.50	<0.50	NA	<0.50	<0.50
MW-7S	11/19/96	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
	02/10/97	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
	05/07/97	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
	08/04/97	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
	11/13/97	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
	02/23/98	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
	05/26/98	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
MW-100S	06/18/03	2.3	**70**	2.1	<1.0	**7.7**	<1.0	<1.0
	09/19/03	1.6	**34**	<1.0	<1.0	3.1	<1.0	<1.0
	01/16/04	2.0	**47**	1.6	<1.0	4.4	<1.0	<1.0
MW-102S	02/18/98	1.6	**60**	<1.3	<1.3	4.4	<1.3	<1.3
	05/20/98	3.70	**98**	<0.50	<0.50	**7.50**	<0.50	<0.50
	08/25/98	1.40	**49**	<0.50	<0.50	4.70	<0.50	<0.50
	11/10/98	<1.0	**41**	<0.50	<0.50	3.40	<0.50	<0.50
	02/11/99	1.80	**40**	<0.50	<0.50	3.60	<0.50	<0.50
	06/11/01	1	**59**	<0.2	<0.2	**7**	<0.2	<0.2
	03/07/02	1.7	**110**	0.58	<0.50	6.4	<0.50	<0.50
	06/17/03	2.7	**120**	<1.0	< 1.0	**12**	<1.0	<1.0
MW-102SR	10/29/07	2.6	**120**	1.3	<0.50	6.7	<0.50	<5.0
	12/19/07	1.9	**130**	<1.0	<0.5	**8.6**	<0.5	<5.0
	04/30/08	1.2	**110**	<1.0	<0.5	3.4	<0.5	<5.0
	09/03/08	1.2	**100**	<1.0	<0.5	4.9	<0.5	<5.0
	12/17/08	1.3	**110**	<1.0	<0.5	4.7	<0.5	<5.0
	03/06/09	<0.50	**65**	<1.0	<0.50	3.6	<0.50	<5.0
	09/09/09	0.99	**69**	<1.0	<0.50	1.7	<0.50	<5.0
	09/16/10	1.2	**83**	<1.0	<0.50	4.7	<0.50	<5.0
	09/15/11	1.8	**91**	<1.0	<0.50	5.5	<0.50	<5.0
MW-103S	02/09/98	<1.3	**59**	<1.3	<1.3	2.0	<1.3	<1.3
	05/18/98	<1.0	**29**	<1.0	<1.0	<1.0	<1.0	<1.0
	08/20/98	<0.50	**28**	<0.50	<0.50	0.78	<0.50	<0.50
	11/06/98	<0.50	**29**	<0.50	<0.50	<0.50	<0.50	<0.50
	02/08/99	0.60	**40**	<0.50	<0.50	1.20	<0.50	<0.50
	11/23/99	<0.50	**34**	<0.50	<0.50	0.89	<0.50	<0.50
	06/07/01	0.4	**30**	<0.2	<0.2	1	<0.2	<0.2
	03/07/02	0.57	**40**	<0.50	<0.50	1.4	<0.50	<0.50
MW-104S	02/09/98	<1.0	**32**	<1.0	<1.0	**9.9**	<1.0	<1.0
	05/19/98	<1.0	**25**	<1.0	<1.0	**11**	<1.0	<1.0
	08/20/98	<0.50	**67**	<0.50	<0.50	**17**	<0.50	<0.50

Table 3-1
SUMMARY OF HISTORICAL VOC ANALYTICAL DATA FOR SGWS AND LSGS MONITORING WELLS
WEST OSBORN COMPLEX WQARF SITE, PHOENIX, ARIZONA

Analytical Results for Selected Volatile Organic Compounds								
Well ID	**Date Sampled**	**PCE (µg/L)**	**TCE (µg/L)**	**cis-1,2-DCE (µg/L)**	**trans-1,2-DCE (µg/L)**	**1,1-DCE (µg/L)**	**Vinyl Chloride (µg/L)**	**Chloroethane (µg/L)**
Aquifer Water Quality Standard (µg/L)		**5**	**5**	**70**	**100**	**7**	**2**	**NE**
MW-104S	11/06/98	<2.5	**110**	<2.5	<2.5	**13**	<2.5	<2.5
(cont)	02/08/99	<2.5	**83**	<2.5	<2.5	**11**	<2.5	<2.5
	06/29/99	<2.0	**44**	<2.0	<2.0	**8**	<2.0	<2.0
	11/20/99	1.60	**81**	<0.50	<0.50	**8.6**	<0.50	<0.50
	06/11/01	3	**130**	1.0	<0.2	**19**	<0.2	<0.2
	03/07/02	4.2	**200**	2.9	<0.50	**27**	<0.50	<0.50
	06/17/03	4.4	**190**	2.2	<1.0	**10**	<1.0	<1.0
	09/19/03	3.4	**180**	2.0	<1.0	**24**	<1.0	<1.0
MW-201S	02/08/99	0.61	**21**	<0.50	<0.50	<0.50	<0.50	<0.50
	06/29/99	<0.50	2.1	<0.50	<0.50	<0.50	<0.50	<0.50
	11/20/99	<0.50	1.6	<0.50	<0.50	<0.50	<0.50	<0.50
	06/07/01	0.8	**72**	<0.2	<0.2	4.0	<0.2	<0.2
	03/07/02	0.9	**57**	<0.50	<0.50	2.6	<0.50	<0.50
	06/18/03	<1.0	**39**	<1.0	<1.0	2.9	<1.0	<1.0
	09/18/03	<1.0	**38**	<1.0	<1.0	2.5	<1.0	<1.0
	01/16/04	<1.0	**27**	<1.0	<1.0	1.5	<1.0	<1.0
	05/21/04	<1.0	4.2	<1.0	<1.0	<1.0	<1.0	<1.0
	06/28/05	<0.50	1.6	<0.50	<0.50	<0.50	<0.50	<5.0
	09/14/06	<1.0	**23**	<1.0	<1.0	2.0	<1.0	<1.0
	06/11/07	0.6	**27**	<0.50	<0.50	2.2	<0.50	<0.50
	12/19/07	0.5	**24**	<1.0	<0.5	1.9	<0.5	<5.0
	04/29/08	0.5	**23**	<1.0	<0.5	<1.0	<0.5	<5.0
	09/04/08	<0.5	**17**	<1.0	<0.5	1.3	<0.5	<5.0
	12/16/08	0.53	**32**	<1.0	<0.5	2.3	<0.5	<5.0
	3/9/2009	<0.50	**10**	<1.0	<0.50	<1.0	<0.50	<5.0
	9/11/2009	<0.50	**11**	<1.0	<0.50	<1.0	<0.50	<5.0
	9/22/2010	<0.50	**14**	<1.0	<0.50	<1.0	<0.50	<5.0
	9/21/2011	<0.50	**7.2**	<1.0	<0.50	<1.0	<0.50	<5.0
MW-202S	06/13/05	<0.50	**27**	<0.50	<0.50	0.62	<0.50	<5.0
	06/28/05	0.62	**26**	<0.50	<0.50	0.60	<0.50	<5.0
	09/20/06	<1.0	**22**	<1.0	<1.0	<1.0	<1.0	<1.0
	06/12/07	<0.50	**22**	<0.50	<0.50	0.52	<0.50	<0.50
	12/18/07	<0.5	**21**	<1.0	<0.5	<1.0	<0.5	<5.0
	04/29/08	<0.5	**16**	<1.0	<0.5	<1.0	<0.5	<5.0
	09/02/08	<0.5	**12**	<1.0	<0.5	<1.0	<0.5	<5.0
	12/16/08	<0.5	**21**	<1.0	<0.5	<1.0	<0.5	<5.0
	03/05/09	<0.5	**10**	<1.0	<0.5	<1.0	<0.5	<5.0
	09/09/09	<0.5	**13**	<1.0	<0.5	<1.0	<0.50	<5.0
	09/15/10	<0.50	**12**	<1.0	<0.50	<1.0	<0.50	<5.0
	09/15/11	<0.50	**11**	<1.0	<0.50	<1.0	<0.50	<5.0
MW-203S	06/28/05	**5.3**	**140**	2.9	<0.50	**36**	<0.50	<5.0
	09/15/06	2.9	**160**	1.9	<1.0	**15**	<1.0	<1.0
	06/12/07	2.5	**90**	1.7	<0.5	**16**	<0.50	<0.50
	12/19/07	1.9	**110**	1.3	<0.5	**16**	<0.5	<5.0
	04/29/08	1.3	**76**	<1.0	<0.5	**6.9**	<0.5	<5.0
	09/04/08	1.5	**93**	<1.0	<0.5	**14**	<0.5	<5.0
	12/16/08	1.4	**96**	<1.0	<0.5	**15**	<0.5	<5.0
	03/03/09	<0.50	**40**	<1.0	<0.5	**8.8**	<0.50	<5.0
	09/09/09	1.1	**65**	<1.0	<0.50	6.6	<0.50	<5.0
	09/15/10	1.8	**75**	1.0	<0.50	**12**	<0.50	<5.0
	09/15/11	2.1	**95**	<1.0	<0.50	**10**	<0.50	<5.0

Table 3-1
SUMMARY OF HISTORICAL VOC ANALYTICAL DATA FOR SGWS AND LSGS MONITORING WELLS
WEST OSBORN COMPLEX WQARF SITE, PHOENIX, ARIZONA

Analytical Results for Selected Volatile Organic Compounds								
Well ID	**Date Sampled**	**PCE (µg/L)**	**TCE (µg/L)**	**cis-1,2-DCE (µg/L)**	**trans-1,2-DCE (µg/L)**	**1,1-DCE (µg/L)**	**Vinyl Chloride (µg/L)**	**Chloroethane (µg/L)**
Aquifer Water Quality Standard (µg/L)		**5**	**5**	**70**	**100**	**7**	**2**	**NE**
MW-204S	06/13/05	3.5	**150**	1.1	<0.50	**12**	<0.50	<5.0
	07/01/05	3.9	**160**	1.2	<0.50	**17**	<0.50	<5.0
	09/20/06	3.9	**190**	<1.0	<1.0	**13**	<1.0	<1.0
	06/12/07	3.3	**150**	1.4	<0.50	**15**	<0.50	<0.50
	12/19/07	4.0	**260**	<2.0	<1.0	**26**	<1.0	<10
	04/30/08	3.7	**230**	<2.0	<1.0	**17**	<1.0	<10
	09/03/08	3.1	**210**	<2.0	<1.0	**20**	<1.0	<10
	12/18/08	3.3	**270**	<4.0	<2.0	**32**	<2.0	<20
	03/05/09	1.4	**150**	<1.0	<0.50	**17**	<0.50	<5.0
	09/10/09	2.4	**150**	<1.0	<0.50	**8.9**	<0.50	<5.0
	09/16/10	<5.0	**140**	<10	<5.0	**7.0**	<5.0	<50
	09/16/11	3.0	**180**	<2.0	<1.0	**16**	<1.0	<10
MW-205S	06/15/05	2.5	**77**	<0.50	<0.50	**7.3**	<0.50	<5.0
	06/28/05	2.3	**97**	<0.50	<0.50	6.0	<0.50	<5.0
	09/20/06	2.2	**75**	<1.0	<1.0	4.2	<1.0	<1.0
	06/12/07	1.7	**83**	<0.50	<0.50	5.5	<0.50	<0.50
	12/18/07	1.3	**100**	<1.0	<0.5	3.8	<0.5	<5.0
	04/29/08	1.2	**110**	<1.0	<0.5	2.2	<0.5	<5.0
	09/02/08	1.2	**110**	<1.0	<0.5	4.5	<0.5	<5.0
	12/17/08	1.4	**150**	<1.0	<0.5	6.2	<0.5	<5.0
	03/06/09	<0.50	**83**	<1.0	<0.50	3.0	<0.50	<5.0
	09/09/09	0.91	**79**	<1.0	<0.50	1.7	<0.50	<5.0
	09/15/10	0.85	**67**	<1.0	<0.50	3.4	<0.50	<5.0
	09/15/11	1.1	**82**	<1.0	<0.50	2.7	<0.50	<5.0
MW-206S	09/19/06	2.0	**55**	<1.0	<1.0	2.5	<1.0	<1.0
	06/12/07	3.0	**140**	1.8	<0.50	**16.0**	<0.50	<0.50
	12/18/07	2.5	**180**	1.6	<0.5	**16**	<0.5	<5.0
	04/30/08	2.2	**160**	<1.0	<0.5	**11**	<0.5	<5.0
	09/02/08	2.3	**150**	<2.0	<1.0	**16**	<1.0	<10.0
	12/18/08	2.3	**160**	1.1	<1.0	**18**	<0.5	<5.0
	03/05/09	0.73	**74**	<1.0	<0.50	**8.8**	<0.50	<5.0
	09/10/09	1.50	**86**	<1.0	<0.50	**8.7**	<0.50	<5.0
	09/16/10	1.6	**98**	1.1	<0.50	**14**	<0.50	<5.0
	09/16/11	2.2	**130**	<2.0	<1.0	**14**	<1.0	<10
MW-207S	09/19/06	3.9	**67**	<1.0	<1.0	6.0	<1.0	<1.0
	06/12/07	**5.0**	**51**	0.60	<0.50	**9.0**	<0.50	<0.50
	12/18/07	2.1	**70**	<1.0	<0.5	6.6	<0.5	<5.0
	04/29/08	4.1	**56**	<1.0	<0.5	2.7	<0.5	<5.0
	09/02/08	2.3	**66**	<1.0	<0.5	3.6	<0.5	<5.0
	12/17/08	3.2	**100**	<1.0	<0.5	**13**	<0.5	<5.0
	03/06/09	2.7	**39**	<0.50	<0.50	6.5	<0.50	<5.0
	09/10/09	2.0	**37**	<1.0	<0.50	2.5	<0.50	<5.0
	09/15/10	**7.2**	**55**	0.54	<0.50	6.6	<0.50	<5.0
	09/15/11	**5.6**	**50**	<1.0	<0.50	3.3	<0.50	<5.0
MW-208S	10/30/07	0.95	**49**	1.3	<0.50	<1.0	<0.50	<5.0
	12/18/07	0.98	**72**	<1.0	<0.5	6.3	<0.5	<5.0
	04/29/08	0.57	**47**	<1.0	<0.5	2.4	<0.5	<5.0
	09/02/08	0.55	**39**	<1.0	<0.5	2.9	<0.5	<5.0
	12/16/08	0.85	**69**	<1.0	<0.5	**7.2**	<0.5	<5.0
	03/05/09	<0.50	**12**	<0.50	<0.50	1.8	<0.50	<5.0
	09/09/09	<0.50	**28**	<1.0	<0.50	<1.0	<0.50	<5.0
	09/15/10	<0.50	**22**	<1.0	<0.50	2.0	<0.50	<5.0
	09/15/11	0.53	**32**	<1.0	<0.50	2.8	<0.50	<5.0

Table 3-1
SUMMARY OF HISTORICAL VOC ANALYTICAL DATA FOR SGWS AND LSGS MONITORING WELLS
WEST OSBORN COMPLEX WQARF SITE, PHOENIX, ARIZONA

Analytical Results for Selected Volatile Organic Compounds								
Well ID	**Date Sampled**	**PCE (µg/L)**	**TCE (µg/L)**	**cis-1,2-DCE (µg/L)**	**trans-1,2-DCE (µg/L)**	**1,1-DCE (µg/L)**	**Vinyl Chloride (µg/L)**	**Chloroethane (µg/L)**
Aquifer Water Quality Standard (µg/L)		**5**	**5**	**70**	**100**	**7**	**2**	**NE**
MW-209S	10/30/07	**10**	1.4	0.58	<0.50	<0.50	<0.50	<5.0
	12/18/07	**8.9**	1.2	<1.0	<0.5	<1.0	<0.5	<5.0
	04/29/08	**8.9**	0.92	<1.0	<0.5	<1.0	<0.5	<5.0
	09/02/08	**6.3**	0.90	<1.0	<0.5	<1.0	<0.5	<5.0
	12/16/08	**7.0**	1.0	<1.0	<0.5	<1.0	<0.5	<5.0
	03/03/09	1.7	<0.50	<1.0	<0.5	<1.0	<0.5	<5.0
	09/09/09	**7.9**	0.95	<1.0	<0.50	<1.0	<0.50	<5.0
	09/15/10	4.0	<0.50	<1.0	<0.50	<1.0	<0.50	<5.0
	09/15/11	**7.7**	0.85	<1.0	<0.50	<1.0	<0.50	<5.0
ARCO MW-2	06/18/03	<1.0	<1.0	32	<1.0	<1.0	<1.0	<1.0
	09/19/03	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	01/16/04	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	05/21/04	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	06/27/05	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<5.0
	09/14/06	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	09/21/10	<0.50	0.51	<1.0	<0.50	<1.0	<0.50	<5.0
WCP-204	06/28/05	<0.50	0.66	<0.50	<0.50	<0.50	<0.50	<5.0
	09/19/06	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
WCP-207	09/19/06	3.1	**95**	1.5	<1.0	4.5	<1.0	<1.0
	12/18/08	**7.7**	**88**	<1.0	<0.50	6.0	<0.50	<5.0
	03/06/09	2.6	**48**	<1.0	<0.50	2.9	<0.50	<5.0
	09/23/10	**9.4**	**83**	<1.0	<0.50	5.5	<0.50	<5.0
	09/15/11	**11**	**85**	1.2	<0.50	3.3	<0.50	<5.0
MW-2M	12/05/96	<5.0	**75**	<5.0	<5.0	<5.0	<5.0	<5.0
	02/04/97	< 2.5	**80**	<2.5	<2.5	<2.5	<2.5	<2.5
	05/07/97	<2.5	**72**	<2.5	<2.5	<2.5	<2.5	<2.5
	08/08/97	<2.5	**61**	<2.5	<2.5	<2.5	<2.5	<2.5
	11/18/97	<2.5	**120**	<2.5	<2.5	<2.5	<2.5	<2.5
	02/13/98	<2.5	**110**	<2.5	<2.5	<2.5	<2.5	<2.5
	05/21/98	<2.5	**64**	<2.5	<2.5	<2.5	<2.5	<2.5
	08/27/98	<2.5	**67**	<2.5	<2.5	<2.5	<2.5	<2.5
	11/10/98	<2.5	**65**	<2.5	<2.5	<2.5	<2.5	<2.5
	02/12/99	0.68	**40**	<0.50	<0.50	<0.50	<0.50	<0.50
	11/19/99	0.83	**46**	<0.50	<0.50	<0.50	<0.50	<0.50
	06/14/01	**5**	**70**	<0.2	<0.2	<0.2	<0.2	<0.2
	06/13/03	**11**	**43**	<1.0	<1.0	<1.0	<1.0	<1.0
	01/16/04	**11**	**45**	<1.0	<1.0	<1.0	<1.0	<1.0
	07/01/05	**11**	**59**	<0.50	<0.50	0.67	<0.50	<5.0
	09/13/06	**12**	**56**	<1.0	<1.0	<1.0	<1.0	<1.0
	09/19/07	**12**	**46**	<0.50	<0.50	0.56	<0.50	<5.0
	05/02/08	**7.8**	**35**	<1.0	<0.50	<1.0	<0.50	<5.0
	09/04/08	**9.4**	**39**	<1.0	<0.50	<1.0	<0.50	<5.0
	03/11/09	**5.5**	**29**	<1.0	<0.50	<1.0	<0.50	<5.0
	09/16/09	**6.9**	**22**	<1.0	<0.50	<1.0	<0.50	<5.0
	09/21/10	**13**	**29**	<1.0	<0.50	<1.0	<0.50	<5.0
	09/20/11	**13**	**29**	<1.0	<0.50	<1.0	<0.50	<5.0
MW-3M	12/03/96	<0.50	**7.3**	<0.50	<0.50	<0.50	<0.50	<0.50
	02/04/97	<0.50	1.6	<0.50	<0.50	<0.50	<0.50	<0.50
	05/07/97	<0.50	**83**	<2.50	<2.50	<2.50	<2.50	<2.50
	08/09/97	<0.50	3.1	<0.50	<0.50	<0.50	<0.50	<0.50
	11/18/97	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
	02/13/98	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
	05/21/98	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
MW-3M	08/27/98	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50

Table 3-1
SUMMARY OF HISTORICAL VOC ANALYTICAL DATA FOR SGWS AND LSGS MONITORING WELLS
WEST OSBORN COMPLEX WQARF SITE, PHOENIX, ARIZONA

Analytical Results for Selected Volatile Organic Compounds								
Well ID	**Date Sampled**	**PCE (µg/L)**	**TCE (µg/L)**	**cis-1,2-DCE (µg/L)**	**trans-1,2-DCE (µg/L)**	**1,1-DCE (µg/L)**	**Vinyl Chloride (µg/L)**	**Chloroethane (µg/L)**
Aquifer Water Quality Standard (µg/L)		**5**	**5**	**70**	**100**	**7**	**2**	**NE**
(cont)	11/10/98	<0.50	**7.7**	<0.50	<0.50	<0.50	<0.50	<0.50
	02/12/99	0.57	**23**	<0.50	<0.50	<0.50	<0.50	<0.50
	11/19/99	1.8	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
	06/16/03	**7.6**	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	01/12/04	**9.6**	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
MW-4M	12/02/96	<0.50	**6.3**	<0.50	<0.50	<0.50	<0.50	<0.50
	02/03/97	<0.50	**5**	<0.50	<0.50	<0.50	<0.50	<0.50
	05/08/97	<0.50	**12**	<0.50	<0.50	<0.50	<0.50	<0.50
	08/06/97	<0.50	3.2	<0.50	<0.50	<0.50	<0.50	<0.50
	11/17/97	<0.50	**8.3**	<0.50	<0.50	<0.50	<0.50	<0.50
	02/11/98	<0.50	**8.4**	<0.50	<0.50	<0.50	<0.50	<0.50
	05/26/98	<0.50	**5.9**	<0.50	<0.50	<0.50	<0.50	<0.50
	08/28/98	<0.50	**7.5**	<0.50	<0.50	<0.50	<0.50	<0.50
	11/11/98	<0.50	3.1	<0.50	<0.50	<0.50	<0.50	<0.50
	02/17/99	<0.50	1.4	<0.50	<0.50	<0.50	<0.50	<0.50
	11/19/99	2	**7.5**	<0.50	<0.50	<0.50	<0.50	<0.50
	06/14/01	**19**	**14**	<0.2	<0.2	<0.2	<0.2	<0.2
	06/16/03	**34**	**18**	<1.0	<1.0	1	<1.0	<1.0
	01/15/04	**27**	**14**	<1.0	<1.0	<1.0	<1.0	<1.0
	07/01/05	**31**	**15**	<0.50	<0.50	1	<0.50	<5.0
	09/13/06	**21**	**13**	<1.0	<1.0	1.3	<1.0	<1.0
	09/19/07	**15**	**14**	<0.50	<0.50	1.4	<0.50	<5.0
	05/02/08	**10**	**8.0**	<1.0	<0.50	<1.0	<0.50	<5.0
	09/03/08	**11**	**9.6**	<1.0	<0.50	<1.0	<0.50	<5.0
	03/11/09	4.6	4.7	<1.0	<0.50	<1.0	<0.50	<5.0
	09/15/09	**5.3**	**5.7**	<1.0	<0.50	<1.0	<0.50	<5.0
	09/21/10	**9.5**	**8.5**	<1.0	<0.50	<1.0	<0.50	<5.0
	09/19/11	**6.8**	**9.4**	<1.0	<0.50	<1.0	<0.50	<5.0
MW-6M	12/06/96	<0.50	**6.2**	<0.50	<0.50	<0.50	<0.50	<0.50
	02/04/97	<0.50	**6.2**	<0.50	<0.50	<0.50	<0.50	<0.50
	05/06/97	<0.50	**8.4**	<0.50	<0.50	<0.50	<0.50	<0.50
	08/08/97	<0.50	**8.3**	<0.50	<0.50	<0.50	<0.50	<0.50
	11/18/97	<0.50	**8.3**	<0.50	<0.50	<0.50	<0.50	<0.50
	02/11/98	<0.50	**8.6**	<0.50	<0.50	<0.50	<0.50	<0.50
	05/19/98	<0.50	3.1	<0.50	<0.50	<0.50	<0.50	<0.50
	08/21/98	<0.50	4.6	<0.50	<0.50	<0.50	<0.50	<0.50
	11/05/98	<0.50	**6**	<0.50	<0.50	<0.50	<0.50	<0.50
	02/09/99	<0.50	**5.8**	<0.50	<0.50	<0.50	<0.50	<0.50
	11/18/99	<0.50	**25**	<0.50	<0.50	0.52	<0.50	<0.50
	06/14/01	<0.2	**5**	<0.2	<0.2	<0.2	<0.2	<0.2
	06/13/03	<1.0	**12**	<1.0	<1.0	<1.0	<1.0	<1.0
	01/14/04	<1.0	**19**	<1.0	<1.0	<1.0	<1.0	<1.0
	07/01/05	0.72	**14**	<0.50	<0.50	<0.50	<0.50	<5.0
	09/12/06	<1.0	**56**	<1.0	<1.0	<1.0	<1.0	<1.0
	09/18/07	<0.50	**45**	0.91	<0.50	<0.50	<0.50	<5.0
	05/02/08	<0.50	**9.7**	<1.0	<0.50	<1.0	<0.50	<5.0
	09/05/08	<0.50	**20**	<1.0	<0.50	<1.0	<0.50	<5.0
	03/11/09	<0.50	**8.2**	<1.0	<0.50	<1.0	<0.50	<5.0
	09/15/09	<0.50	**8**	<1.0	<0.50	<1.0	<0.50	<5.0
	09/17/10	<0.50	**5.3**	<1.0	<0.50	<1.0	<0.50	<5.0
	09/19/11	<0.50	**9.0**	<1.0	<0.50	<1.0	<0.50	<5.0

Table 3-1
SUMMARY OF HISTORICAL VOC ANALYTICAL DATA FOR SGWS AND LSGS MONITORING WELLS
WEST OSBORN COMPLEX WQARF SITE, PHOENIX, ARIZONA

Analytical Results for Selected Volatile Organic Compounds								
Well ID	**Date Sampled**	**PCE (µg/L)**	**TCE (µg/L)**	**cis-1,2-DCE (µg/L)**	**trans-1,2-DCE (µg/L)**	**1,1-DCE (µg/L)**	**Vinyl Chloride (µg/L)**	**Chloroethane (µg/L)**
Aquifer Water Quality Standard (µg/L)		**5**	**5**	**70**	**100**	**7**	**2**	**NE**
MW-7M	12/05/96	<0.50	**9.7**	<0.50	<0.50	<0.50	<0.50	<0.50
	02/04/97	<0.50	**9.7**	<0.50	<0.50	<0.50	<0.50	<0.50
	05/08/97	<0.50	**13**	<0.50	<0.50	<0.50	<0.50	<0.50
	08/06/97	<0.50	**21**	<0.50	<0.50	1.1	<0.50	<0.50
	11/19/97	<0.50	**6.8**	<0.50	<0.50	0.52	<0.50	<0.50
	02/12/98	<0.50	**8.9**	<0.50	<0.50	<0.50	<0.50	<0.50
	05/20/98	<0.50	**5.9**	<0.50	<0.50	<0.50	<0.50	<0.50
	08/27/98	<0.50	2.3	<0.50	<0.50	<0.50	<0.50	<0.50
	11/12/98	<0.50	1.9	<0.50	<0.50	<0.50	<0.50	<0.50
	02/15/99	<0.50	3.2	<0.50	<0.50	<0.50	<0.50	<0.50
	11/29/99	<0.50	4.4	<0.50	<0.50	<0.50	<0.50	<0.50
	06/17/03	**20**	**20**	<1.0	<1.0	1.8	<1.0	<1.0
	01/14/04	**20**	**22**	<1.0	<1.0	1.9	<1.0	<1.0
MW-102M	02/18/98	<0.50	**11**	<0.50	<0.50	<0.50	<0.50	<0.50
	05/20/98	<0.50	**15**	<0.50	<0.50	<0.50	<0.50	<0.50
	08/25/98	<0.50	**13**	<0.50	<0.50	<0.50	<0.50	<0.50
	11/10/98	<0.50	**13**	<0.50	<0.50	<0.50	<0.50	<0.50
	02/11/99	<0.50	**8.7**	<0.50	<0.50	<0.50	<0.50	<0.50
	11/19/99	<0.50	**8.2**	<0.50	<0.50	<0.50	<0.50	<0.50
	06/13/03	<1.0	1.4	<1.0	<1.0	<1.0	<1.0	<1.0
	01/15/04	<1.0	1.1	<1.0	<1.0	<1.0	<1.0	<1.0
MW-105M	02/18/98	<1.0	**52**	<1.0	<1.0	<1.0	<1.0	<1.0
	05/26/98	<1.25	**41**	<1.25	<1.25	<1.25	<1.25	<1.25
	08/25/98	<0.50	**32**	<0.50	<0.50	0.73	<0.50	<0.50
	11/06/98	<0.50	**36**	<0.50	<0.50	<0.50	<0.50	<0.50
	02/09/99	0.56	**37**	<0.50	<0.50	0.83	<0.50	<0.50
	11/29/99	0.66	**40**	<0.50	<0.50	<0.50	<0.50	<0.50
	06/04/01	2	**53**	<0.2	<0.2	0.8	<0.2	<0.2
	06/12/03	**7.5**	**41**	<1.0	<1.0	<1.0	<1.0	<1.0
	01/15/04	**8.9**	**36**	<1.0	<1.0	<1.0	<1.0	<1.0
	06/30/05	**13**	**47**	<0.50	<0.50	0.66	<0.50	<5.0
	09/18/06	**13**	**60**	<1.0	<1.0	1.9	<1.0	<1.0
	09/19/07	**12**	**46**	<0.50	<0.50	1.4	<0.50	<5.0
	05/03/08	**11**	**46**	<1.0	<0.50	<1.0	<0.50	<5.0
	09/05/08	**13**	**60**	<1.0	<0.50	2.6	<0.50	<5.0
	03/10/09	4.9	**35**	<1.0	<0.50	1.7	<0.50	<5.0
	09/16/09	**6.6**	**32**	<1.0	<0.50	<1.0	<0.50	<5.0
	09/22/10	**12**	**36**	<1.0	<0.50	1.3	<0.50	<5.0
	09/20/11	**11**	**41**	<1.0	<0.50	1.4	<0.50	<5.0
MW-106M	02/18/98	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
	05/26/98	2.8	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
	08/27/98	2.6	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
	11/10/98	3.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
	02/17/99	2.6	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
	11/19/99	4.1	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
	06/13/03	3.2	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	01/14/04	3	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
MW-107M	04/05/01	<1.0	**56**	1.3	<1.0	<1.0	<1.0	<1.0
	05/07/01	<1.0	**51**	1.1	<1.0	<1.0	<1.0	<1.0
	06/04/01	0.6	**56**	<1.0	<0.2	0.4	<0.2	<0.2
	06/13/03	<1.0	**51**	<1.0	<1.0	<1.0	<1.0	<1.0
	09/19/03	<1.0	**41**	1.2	<1.0	<1.0	<1.0	<1.0
	01/14/04	<1.0	**54**	1.5	<1.0	<1.0	<1.0	<1.0
MW-107M	07/07/05	0.81	**45**	1.6	<0.50	<0.50	<0.50	<0.50

Table 3-1
SUMMARY OF HISTORICAL VOC ANALYTICAL DATA FOR SGWS AND LSGS MONITORING WELLS
WEST OSBORN COMPLEX WQARF SITE, PHOENIX, ARIZONA

Analytical Results for Selected Volatile Organic Compounds								
Well ID	**Date Sampled**	**PCE (µg/L)**	**TCE (µg/L)**	**cis-1,2-DCE (µg/L)**	**trans-1,2-DCE (µg/L)**	**1,1-DCE (µg/L)**	**Vinyl Chloride (µg/L)**	**Chloroethane (µg/L)**
Aquifer Water Quality Standard (µg/L)		**5**	**5**	**70**	**100**	**7**	**2**	**NE**
(cont)	09/27/06	<1.0	**52**	1.4	<1.0	<1.0	<1.0	<1.0
	09/20/07	0.77	**55**	1.4	<0.50	<0.50	<0.50	<5.0
	05/03/08	<0.50	**9.4**	<1.0	<0.50	<1.0	<0.50	<5.0
	09/05/08	2.1	2.7	<1.0	<0.50	<1.0	<0.50	<5.0
	03/04/09	<0.50	**12**	<1.0	<0.50	<1.0	<0.50	<5.0
	09/14/09	<0.50	**12**	<1.0	<0.50	<1.0	<0.50	<5.0
	09/23/10	<0.50	**9.3**	<1.0	<0.50	<1.0	<0.50	<5.0
	09/22/11	0.52	**35**	<1.0	<0.50	<1.0	<0.50	<5.0
MW-108M	04/03/02	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	06/13/03	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	09/22/03	<1.0	1.1	<1.0	<1.0	<1.0	<1.0	<1.0
	01/19/04	<1.0	1.6	<1.0	<1.0	<1.0	<1.0	<1.0
	05/20/04	<1.0	2.5	<1.0	<1.0	<1.0	<1.0	<1.0
	06/27/05	<0.50	**5**	<0.50	<0.50	<0.50	<0.50	<5.0
	09/15/06	<1.0	**6.1**	<1.0	<1.0	<1.0	<1.0	<1.0
	09/20/07	<0.50	**11**	<0.50	<0.50	<0.50	<0.50	<5.0
	05/02/08	<0.50	3.9	<1.0	<0.50	<1.0	<0.50	<1.0
	09/04/08	2.2	1.4	<1.0	<0.50	<1.0	<0.50	<5.0
	03/05/09	<0.50	**5.3**	<1.0	<0.50	<1.0	<0.50	<5.0
	09/14/09	<0.50	**4.0**	<1.0	<0.50	<1.0	<0.50	<5.0
	09/23/10	<0.50	**1.6**	<1.0	<0.50	<1.0	<0.50	<5.0
	09/22/11	0.55	**9.2**	<1.0	<0.50	<1.0	<0.50	<5.0
MW-109M	05/13/03	<1.0	1.8	<1.0	<1.0	<1.0	<1.0	<1.0
	06/16/03	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	09/22/03	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	01/13/04	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	05/20/04	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	06/27/05	<0.50	0.87	<0.50	<0.50	<0.50	<0.50	<5.0
	09/12/06	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	09/18/07	<0.50	1.3	<0.50	<0.50	<0.50	<0.50	<5.0
	05/01/08	<0.50	1.1	<1.0	<0.50	<1.0	<0.50	<5.0
	09/03/08	<0.50	1.2	<1.0	<0.50	<1.0	<0.50	<5.0
	03/09/09	<0.50	1.0	<1.0	<0.50	<1.0	<0.50	<5.0
	09/15/09	<0.50	1.1	<1.0	<0.50	<1.0	<0.50	<5.0
	09/20/10	<0.50	3.2	<1.0	<0.50	<1.0	<0.50	<5.0
	09/19/11	<0.50	3.2	<1.0	<0.50	<1.0	<0.50	<5.0
MW-110M	05/13/03	<1.0	1.9	<1.0	<1.0	<1.0	<1.0	<1.0
	06/17/03	<1.0	1.5	<1.0	<1.0	<1.0	<1.0	<1.0
	09/22/03	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	01/13/04	<1.0	1.1	<1.0	<1.0	<1.0	<1.0	<1.0
	05/21/04	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	06/27/05	<0.50	1.5	<0.50	<0.50	<0.50	<0.50	<5.0
	09/27/06	<1.0	2	<1.0	<1.0	<1.0	<1.0	<1.0
	09/19/07	0.73	2.1	<0.50	<0.50	<0.50	<0.50	<5.0
	04/29/08	0.56	1.6	<1.0	<0.50	<1.0	<0.50	<5.0
	09/20/10	1.2	3	<1.0	<0.50	<1.0	<0.50	<5.0
	09/03/08	0.73	2.0	<1.0	<0.50	<1.0	<0.50	<5.0
	03/10/09	<0.50	1.3	<1.0	<0.50	<1.0	<0.50	<5.0
	09/15/09	<0.50	1.3	<1.0	<0.50	<1.0	<0.50	<5.0

Table 3-1
SUMMARY OF HISTORICAL VOC ANALYTICAL DATA FOR SGWS AND LSGS MONITORING WELLS
WEST OSBORN COMPLEX WQARF SITE, PHOENIX, ARIZONA

Analytical Results for Selected Volatile Organic Compounds								
Well ID	**Date Sampled**	**PCE (µg/L)**	**TCE (µg/L)**	**cis-1,2-DCE (µg/L)**	**trans-1,2-DCE (µg/L)**	**1,1-DCE (µg/L)**	**Vinyl Chloride (µg/L)**	**Chloroethane (µg/L)**
Aquifer Water Quality Standard (µg/L)		**5**	**5**	**70**	**100**	**7**	**2**	**NE**
MW-110M	09/20/10	1.2	3.0	<1.0	<0.50	<1.0	<0.50	<5.0
(cont)	09/16/11	1.1	2.8	<1.0	<0.50	<1.0	<0.50	<5.0
MW-203M	06/15/05	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<5.0
	07/07/05	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<5.0
	09/15/06	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	09/20/07	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<5.0
	05/01/08	<0.50	0.53	<1.0	<0.50	<1.0	<0.50	<5.0
	09/02/08	<0.50	<0.50	<1.0	<0.50	<1.0	<0.50	<5.0
	03/05/09	<0.50	<0.50	<1.0	<0.50	<1.0	<0.50	<5.0
	09/11/09	<0.50	<0.50	<1.0	<0.50	<1.0	<0.50	<5.0
	09/17/10	<0.50	<0.50	<1.0	<0.50	<1.0	<0.50	<5.0
	09/22/11	<0.50	<0.50	<1.0	<0.50	<1.0	<0.50	<5.0

Notes:

Bolded results indicate exceedances of Aquifer Water Quality Standards
NE = Not Established
µg/L = micrograms per liter
<1.0 = Analyte not detected above the listed detection limit.
PCE = Tetrachloroethylene
TCE = Trichloroethylene
cis-1,2-DCE = cis-1,2-Dichloroethylene
trans-1,2-DCE = trans-1,2-Dichloroethylene
1,1-DCE = 1,1-Dichloroethylene

Table 3-2
Annual Pumping Volume by SRP Well 9.5E-7.7N

Year	Pumping (acre-feet)
1949	3136
1950	4249
1951	3525
1952	2417
1953	2133
1954	2963
1955	2753
1956	4889
1957	3625
1958	3345
1959	3057
1960	2431
1961	3078
1962	2295
1963	2512
1964	2186
1965	1593
1966	872
1967	3300
1968	555
1969	1530
1970	2517
1971	2942
1972	2440
1973	177
1974	2293
1975	2603
1976	2817
1977	3047
1978	55
1979	12
1980	9
1981	2638
1982	1116
1983	10
1984	1607
1985	11
1986	48
1987	21
1988	0.5
1989	102
1990	1900
1991	419
1992	16
1993	31
1994	367
1995	85
1996	717
1997	883
1998	161
1999	545

Table 3-3
Summary of Inorganic Parameters
in Wells MW-6M and MW-108M
West Osborn Complex WQARF Site
Phoenix, Arizona

Parameter	AWQS	Groundwater Monitoring Wells	
		MW-6M	MW-108M
INORAGNIC PARAMETERS (mg/L)			
Alkalinity (Total)	NE	**170**	**220**
Bicarbonate	NE	**170**	**220**
Carbonate	NE	<10	<10
Chloride	NE	**280 D2**	**250 D2**
Chromium VI	0.1*	<0.010	**0.011**
Chromium III	0.1*	<0.010	<0.010
Ferric Iron	NE	<0.1	<0.1
Ferrous Iron	NE	**0.94**	<0.1
Hardness (Total)	NE	**290**	**250**
Hydroxide	NE	<10	<10
Nitrate	10	**8.7**	**4.1**
Nitrate + Nitrite	10	**8.4**	**4.3**
Nitrite	1	<0.1	<0.1
Sulfate	NE	**96 D2**	**98 D2**
Total Organic Carbon (TOC)	NE	<1	<1
Total Carbon Dioxide	NE	**160**	**220**
ADDITIONAL INORAGNIC PARAMETERS			
Conductivity (µmhos/cm)	NE	**1,451**	**1,415**
pH	NE	**7.55**	**7.22**
TOTAL METALS (mg/L)			
Aluminum	NE	**0.014**	<0.010
Arsenic	0.05*	**0.0018**	**0.0038**
Calcium	NE	**49**	**46**
Chromium	0.1*	**0.0081**	**0.0094**
Copper	NE	**0.0030**	**0.0090**
Iron	NE	**0.930**	<0.100
Magnesium	NE	**41**	**33**
Potassium	NE	**4**	**4.1**
Sodium	NE	**180 D2**	**200 D2**
Zinc	NE	**7.1**	**0.180**
DISSOLVED METALS (mg/L)			
Aluminum	NE	<0.010	<0.010
Arsenic	0.05*	**0.0015**	**0.0053**
Calcium	NE	**48**	**44**
Chromium	0.1*	**0.0098**	**0.019**
Copper	NE	**0.0018**	**0.0059**
Iron	NE	<0.100	<0.100
Magnesium	NE	**33**	**29**
Potassium	NE	**3.8**	**3.9**
Sodium	NE	**160**	**180**
Zinc	NE	**2.7**	**0.210**
SILICAS (mg/L)			
Total Silica	NE	**26**	**26**
Dissolved Silica	NE	**25**	**26**

mg/L = milligrams per liter
µmhos/cm = micromhos per centimeter
AWQS = Aquifer Water Quality Standard
* = AWQS is for total metals
NE = not established
D2 = Sample required dilution due to high concentration of target analyte

TABLE 3-4
Data Set for Figure 3-25
Chemical Fingerprints of North Canal Plume

Well ID	Date Sampled	1,1-DCE (µg/L)	PCE (µg/L)	TCE (µg/L)	TOTAL CONCENTRATION	Data for trilinear plot (Figure 3-20)		
						% 11DCE	% PCE	% TCE
North Canal Plume (NCP) Wells								
DEC-1	09/19/02	23	150	9.70	182.7	5.3	12.6	82.1
	03/12/03	37	220	12	269.0	4.5	13.8	81.8
	06/03/03	38	220	12	270.0	4.4	14.1	81.5
DJM-6	05/04/01	0	2	0	2.0	0	0	100
	06/04/01	0.50	6	0	6.5	0	7.7	92.3
	07/06/01	0.40	6	0.40	6.8	5.9	5.9	88.2
	10/04/01	0	5	0	5.0	0	0	100
	01/09/02	0.50	6	0.40	6.9	5.8	7.2	87
	04/10/02	1.1	7.5	0.92	9.52	9.7	11.6	78.8
	09/19/02	0.58	6.3	0.53	7.41	7.2	7.8	85
	12/12/02	0.53	8.4	2.7	11.63	23.2	4.6	72.2
	03/12/03	0.68	7.6	1.7	9.98	17	6.8	76.2
	06/03/03	0.49	5.0	1.5	6.99	21.5	7	71.5
	03/23/04	0	2.2	0	2.2	0	0	100
WCP-1	05/15/92	12	16.7	9.6	38.3	25.1	31.3	43.6
	06/24/92	13	15	12	40	30	32.5	37.5
	12/03/92	14	19	9.2	42.2	21.8	33.2	45
	01/24/94	9.9	12	4.9	26.8	18.3	36.9	44.8
	02/07/96	9.7	18	5.6	33.3	16.8	29.1	54.1
WCP-12	02/06/96	2	2.2	0	4.2	0	47.6	52.4
	11/25/96	1.4	0.71	0	2.11	0	66.4	33.6
	02/06/97	1.4	1.10	0	2.5	0	56	44
	05/09/97	2.5	0.53	0	3.03	0	82.5	17.5
	08/05/97	2.1	0.99	0	3.09	0	68	32
	11/14/97	1.4	0.74	0	2.14	0	65.4	34.6
	02/18/98	1.2	1.0	0.00	2.2	0	54.5	45.5
WCP-14	07/10/92	0	290	1.5	291.5	0.5	0	99.5
	12/29/99	690	520	89	1299	6.9	53.1	40
	02/02/00	440	320	60	820	7.3	53.7	39
WCP-210	04/08/05	17	97	24	138	17.4	12.3	70.3
	06/09/05	11	87	22	120	18.3	9.2	72.5
WCP-211	04/08/05	3.1	18	0.75	21.9	3.4	14.2	82.4
	06/08/05	1.4	9	0	10.4	0	13.5	86.5
WCP-25	02/06/96	2.7	1.9	0	4.6	0	58.7	41.3
	05/04/01	1	66	49	116	42.2	0.9	56.9
	06/04/01	1	61	49	111	44.1	0.9	55
	07/06/01	1	67	49	117	41.9	0.9	57.3
	10/04/01	2	64	37	103	35.9	1.9	62.1
	01/09/02	1	63	39	103	37.9	1	61.2
	04/10/02	2	61	36	99	36.4	2	61.6
	09/19/02	1.8	64	47	112.8	41.7	1.6	56.7
	12/12/02	4.1	110	68	182.1	37.3	2.3	60.4
	06/03/03	2.5	100	56	158.5	35.3	1.6	63.1

TABLE 3-4
Data Set for Figure 3-25
Chemical Fingerprints of North Canal Plume

Well ID	Date Sampled	1,1-DCE (µg/L)	PCE (µg/L)	TCE (µg/L)	TOTAL CONCENTRATION	Data for trilinear plot (Figure 3-20)		
						% 11DCE	% PCE	% TCE
WCP-25	03/23/04	0	43	39	82.0	47.6	0	52.4
	06/23/04	1.7	55	41	97.7	42	1.7	56.3
	09/17/04	0.86	47	37	84.9	43.6	1	55.4
	01/14/05	2.1	49	30	81.1	37.0	2.6	60.4
	03/30/05	1.8	52	34	87.8	38.7	2.1	59.2
	06/09/05	1.2	55	40	96.2	41.6	1.2	57.2
WCP-26	05/04/01	1	100	64	165	38.8	0.6	60.6
	06/04/01	3	96	75	174	43.1	1.7	55.2
	07/06/01	3	91	65	159	40.9	1.9	57.2
	07/06/01	3	91	63	157	40.1	1.9	58
	10/04/01	5	82	56	143	39.2	3.5	57.3
	10/04/01	5	82	56	143	39.2	3.5	57.3
	01/09/02	4	83	59	146	40.4	2.7	56.8
	04/10/02	4.5	82	62	148.5	41.8	3	55.2
	09/19/02	4.7	110	76	190.7	39.9	2.5	57.7
	12/12/02	9.4	160	75	244.4	30.7	3.8	65.5
	03/12/03	8.8	270	120	398.8	30.1	2.2	67.7
	06/03/03	8.4	290	140	438.4	31.9	1.9	66.1
	03/24/04	1.6	85	51	137.6	37.1	1.2	61.8
	06/24/04	4.2	100	60	164.2	36.5	2.6	60.9
	09/17/04	3	74	46	123	37.4	2.4	60.2
WCP-26	01/13/05	4.4	86	45	135.4	33.2	3.2	63.5
	03/29/05	4.3	83	55	142.3	38.7	3	58.3
	06/09/05	2.1	92	58	152.1	38.1	1.4	60.5
WCP-27	01/14/05	8.7	140	49	197.7	24.8	4.4	70.8
	03/29/05	9.3	130	44	183.3	24	5.1	70.9
	06/09/05	7.3	130	53	190.3	27.9	3.8	68.3
WCP-62	05/04/01	0	0.40	0	0.4	0	0	100
	07/06/01	0	0.30	0	0.3	0	0	100
	01/09/02	0	0.50	0	0.5	0	0	100
	04/10/02	1.2	0.40	0	1.6	0	75	25
	09/19/02	0	0.25	0	0.3	0	0	100
	06/23/04	0	1.4	0	1.4	0	0	100
	09/17/04	0	1.8	0	1.8	0	0	100
	01/13/05	0	2.2	0	2.2	0	0	100
	03/28/05	0	2.4	0	2.4	0	0	100
	06/07/05	0	1.9	0	1.9	0	0	100
WCP-7	06/30/92	2.9	74	36	112.9	31.9	2.6	65.5
	07/28/92	2.6	51	13	66.6	19.5	3.9	76.6
	12/04/92	0	320	78	398	19.6	0	80.4
	01/24/94	0	190	33	223	14.8	0	85.2
	02/08/96	1.8	76	13	90.8	14.3	2.0	83.7
	02/18/96	1.8	76	13	90.8	14.3	2.0	83.7

Notes:
µg/L = micrograms per liter
1,1-DCE = 1,1 Dichloroethene
PCE = Tetrachloroethene
TCE = Trichloroethene
Percentages for the trilinear plot have been rounded to one significant figure for this table.

TABLE 3-5
Data Set for Figure 3-26
Chemical Fingerprints of NCP and WOC Wells Prior to Canal Lining
(Groundwater Mound Present)

Well ID	Date Sampled	1,1-DCE (µg/L)	PCE (µg/L)	TCE (µg/L)	TOTAL CONCENTRATION	Data for trilinear plot (Figure 3-21)		
						% 11DCE	% PCE	% TCE
West Osborn Complex (WOC) Wells								
MW-2M	12/05/96	0	0	**75**	75	0	0	100
	02/04/97	0	0	**80**	80	0	0	100
	05/07/97	0	0	**72**	72	0	0	100
	08/08/97	0	0	**61**	61	0	0	100
	11/18/97	0	0	**120**	120	0	0	100
	02/13/98	0	0	**110**	110	0	0	100
MW-3M	12/03/96	0	0	**7.3**	7.3	0	0	100
	02/04/97	0	0	1.6	1.6	0	0	100
	05/07/97	0	0	**83**	83	0	0	100
	08/09/97	0	0	3.1	3.1	0	0	100
	11/18/97	0	0	0	0	0	0	0
	02/13/98	0	0	0	0	0	0	0
MW-4M	12/02/96	0	0	**6.3**	6.3	0	0	100
	02/03/97	0	0	**5**	5	0	0	100
	05/08/97	0	0	**12**	12	0	0	100
	08/06/97	0	0	3.2	3.2	0	0	100
	11/17/97	0	0	**8.3**	8.3	0	0	100
	02/11/98	0	0	**8.4**	8.4	0	0	100
MW-6M	12/06/96	0	0	**6.2**	6.2	0	0	100
	02/04/97	0	0	**6.2**	6.2	0	0	100
	05/06/97	0	0	**8.4**	8.4	0	0	100
	08/08/97	0	0	**8.3**	8.3	0	0	100
	11/18/97	0	0	**8.3**	8.3	0	0	100
	02/11/98	0	0	**8.6**	8.6	0	0	100
MW-7M	12/05/96	0	0	**9.7**	9.7	0	0	100
	02/04/97	0	0	**9.7**	9.7	0	0	100
	05/08/97	0	0	**13**	13	0	0	100
	08/06/97	1.1	0	**21**	22.1	5	0	95
	11/19/97	0.52	0	**6.8**	7.32	7.1	0	92.9
	02/12/98	0	0	**8.9**	8.9	0	0	100
MW-102M	02/18/98	0	0	**11**	11	0	0	100
MW-105M	02/18/98	0	0	**52**	52	0	0	100
North Canal Plume (NCP) Wells								
DEC-1	09/19/02	23	150	9.70	182.7	5.3	12.6	82.1
	03/12/03	37	220	12	269.0	4.5	13.8	81.8
	06/03/03	38	220	12	270.0	4.4	14.1	81.5
DJM-6	05/04/01	0	2	0	2.0	0	0	100
	06/04/01	0.50	6	0	6.5	0	7.7	92.3
	07/06/01	0.40	6	0.40	6.8	5.9	5.9	88.2
	10/04/01	0	5	0	5.0	0	0	100
	01/09/02	0.50	6	0.40	6.9	5.8	7.2	87
	04/10/02	1.1	7.5	0.92	9.52	9.7	11.6	78.8
	09/19/02	0.58	6.3	0.53	7.41	7.2	7.8	85
	12/12/02	0.53	8.4	2.7	11.63	23.2	4.6	72.2
	03/12/03	0.68	7.6	1.7	9.98	17	6.8	76.2
	06/03/03	0.49	5.0	1.5	6.99	21.5	7	71.5
	03/23/04	0	2.2	0	2.2	0	0	100

TABLE 3-5
Data Set for Figure 3-26
Chemical Fingerprints of NCP and WOC Wells Prior to Canal Lining
(Groundwater Mound Present)

Well ID	Date Sampled	1,1-DCE (µg/L)	PCE (µg/L)	TCE (µg/L)	TOTAL CONCENTRATION	Data for trilinear plot (Figure 3-21)		
						% 11DCE	% PCE	% TCE
WCP-1	05/15/92	12	16.7	9.6	38.3	25.1	31.3	43.6
	06/24/92	13	15	12	40	30	32.5	37.5
	12/03/92	14	19	9.2	42.2	21.8	33.2	45
	01/24/94	9.9	12	4.9	26.8	18.3	36.9	44.8
	02/07/96	9.7	18	5.6	33.3	16.8	29.1	54.1
WCP-12	02/06/96	2	2.2	0	4.2	0	47.6	52.4
	11/25/96	1.4	0.71	0	2.11	0	66.4	33.6
	02/06/97	1.4	1.10	0	2.5	0	56	44
	05/09/97	2.5	0.53	0	3.03	0	82.5	17.5
	08/05/97	2.1	0.99	0	3.09	0	68	32
	11/14/97	1.4	0.74	0	2.14	0	65.4	34.6
	02/18/98	1.2	1.0	0.00	2.2	0	54.5	45.5
WCP-14	07/10/92	0	290	1.5	291.5	0.5	0	99.5
	12/29/99	690	520	89	1299	6.9	53.1	40
	02/02/00	440	320	60	820	7.3	53.7	39
WCP-210	04/08/05	17	97	24	138	17.4	12.3	70.3
	06/09/05	11	87	22	120	18.3	9.2	72.5
WCP-211	04/08/05	3.1	18	0.75	21.9	3.4	14.2	82.4
	06/08/05	1.4	9	0	10.4	0	13.5	86.5
WCP-25	02/06/96	2.7	1.9	0	4.6	0	58.7	41.3
	05/04/01	1	66	49	116	42.2	0.9	56.9
	06/04/01	1	61	49	111	44.1	0.9	55
	07/06/01	1	67	49	117	41.9	0.9	57.3
	10/04/01	2	64	37	103	35.9	1.9	62.1
	01/09/02	1	63	39	103	37.9	1	61.2
	04/10/02	2	61	36	99	36.4	2	61.6
	09/19/02	1.8	64	47	112.8	41.7	1.6	56.7
	12/12/02	4.1	110	68	182.1	37.3	2.3	60.4
	06/03/03	2.5	100	56	158.5	35.3	1.6	63.1
	03/23/04	0	43	39	82.0	47.6	0	52.4
	06/23/04	1.7	55	41	97.7	42	1.7	56.3
	09/17/04	0.86	47	37	84.9	43.6	1	55.4
	01/14/05	2.1	49	30	81.1	37.0	2.6	60.4
	03/30/05	1.8	52	34	87.8	38.7	2.1	59.2
	06/09/05	1.2	55	40	96.2	41.6	1.2	57.2
WCP-26	05/04/01	1	100	64	165	38.8	0.6	60.6
	06/04/01	3	96	75	174	43.1	1.7	55.2
	07/06/01	3	91	65	159	40.9	1.9	57.2
	07/06/01	3	91	63	157	40.1	1.9	58
	10/04/01	5	82	56	143	39.2	3.5	57.3
	10/04/01	5	82	56	143	39.2	3.5	57.3
	01/09/02	4	83	59	146	40.4	2.7	56.8
	04/10/02	4.5	82	62	148.5	41.8	3	55.2
	09/19/02	4.7	110	76	190.7	39.9	2.5	57.7
	12/12/02	9.4	160	75	244.4	30.7	3.8	65.5
	03/12/03	8.8	270	120	398.8	30.1	2.2	67.7
	06/03/03	8.4	290	140	438.4	31.9	1.9	66.1
	03/24/04	1.6	85	51	137.6	37.1	1.2	61.8
	06/24/04	4.2	100	60	164.2	36.5	2.6	60.9

TABLE 3-5
Data Set for Figure 3-26
Chemical Fingerprints of NCP and WOC Wells Prior to Canal Lining
(Groundwater Mound Present)

Well ID	Date Sampled	1,1-DCE (µg/L)	PCE (µg/L)	TCE (µg/L)	TOTAL CONCENTRATION	Data for trilinear plot (Figure 3-21)		
						% 11DCE	% PCE	% TCE
WCP-26	09/17/04	3	74	46	123	37.4	2.4	60.2
	01/13/05	4.4	86	45	135.4	33.2	3.2	63.5
	03/29/05	4.3	83	55	142.3	38.7	3	58.3
	06/09/05	2.1	92	58	152.1	38.1	1.4	60.5
WCP-27	01/14/05	8.7	140	49	197.7	24.8	4.4	70.8
	03/29/05	9.3	130	44	183.3	24	5.1	70.9
	06/09/05	7.3	130	53	190.3	27.9	3.8	68.3
WCP-62	05/04/01	0	0.40	0	0.4	0	0	100
	07/06/01	0	0.30	0	0.3	0	0	100
	01/09/02	0	0.50	0	0.5	0	0	100
	04/10/02	1.2	0.40	0	1.6	0	75	25
	09/19/02	0	0.25	0	0.3	0	0	100
	06/23/04	0	1.4	0	1.4	0	0	100
	09/17/04	0	1.8	0	1.8	0	0	100
	01/13/05	0	2.2	0	2.2	0	0	100
	03/28/05	0	2.4	0	2.4	0	0	100
	06/07/05	0	1.9	0	1.9	0	0	100
WCP-7	06/30/92	2.9	74	36	112.9	31.9	2.6	65.5
	07/28/92	2.6	51	13	66.6	19.5	3.9	76.6
	12/04/92	0	320	78	398	19.6	0	80.4
	01/24/94	0	190	33	223	14.8	0	85.2
	02/08/96	1.8	76	13	90.8	14.3	2.0	83.7
	02/18/96	1.8	76	13	90.8	14.3	2.0	83.7

Notes:
µg/L = micrograms per liter
1,1-DCE = 1,1 Dichloroethene
PCE = Tetrachloroethene
TCE = Trichloroethene
Percentages for the trilinear plot have been rounded to one significant figure for this table.

TABLE 3-6
Data Set for Figure 3-27
Chemical Fingerprints of NCP and WOC Wells Prior to Canal Lining
(Groundwater Mound Dissipating)

Well ID	Date Sampled	1,1-DCE (µg/L)	PCE (µg/L)	TCE (µg/L)	TOTAL CONCENTRATION	Data for trilinear plot (Figure 3-22)		
						% 11DCE	% PCE	% TCE
West Osborn Complex (WOC) LSGS Intermediate Wells								
MW-2M	05/21/98	0	0	**64**	64	0	0	100
	08/27/98	0	0	**67**	67	0	0	100
	11/10/98	0	0	**65**	65	0	0	100
	02/12/99	0	0.68	**40**	40.68	0	1.7	98.3
	11/19/99	0	0.83	**46**	46.83	0	1.8	98.2
	06/14/01	0	**5**	**70**	75	0	6.7	93.3
	06/13/03	0	**11**	**43**	54	0	20.4	79.6
MW-3M	11/10/98	0	0	**7.7**	7.7	0	0	100
	02/12/99	0	0.57	**23**	23.57	0	2.4	97.6
	11/19/99	0	1.8	0.25	2.05	0	87.8	12.2
	06/16/03	0	**7.6**	0	7.6	0	100	0
MW-4M	05/26/98	0	0	**5.9**	5.9	0	0	100
	08/28/98	0	0	**7.5**	7.5	0	0	100
	11/11/98	0	0	3.1	3.1	0	0	100
	02/17/99	0	0	1.4	1.4	0	0	100
	11/19/99	0	2	**7.5**	9.5	0	21.1	78.9
	06/14/01	0	**19**	**14**	33	0	57.6	42.4
	06/16/03	1	**34**	**18**	53	1.9	64.2	34.0
MW-6M	05/19/98	0	0	3.1	3.1	0	0	100
	08/21/98	0	0	4.6	4.6	0	0	100
	11/05/98	0	0	**6**	6	0	0	100
	02/09/99	0	0	**5.8**	5.8	0	0	100
	11/18/99	0.52	0	**25**	25.52	2.0	0	98.0
	06/14/01	0	0	**5**	5	0	0	100
	06/13/03	0	0	**12**	12	0	0	100
MW-7M	05/20/98	0	0.25	**5.9**	6.15	0	4.1	95.9
	08/27/98	0	0	2.3	2.3	0	0	100
	11/12/98	0	0	1.9	1.9	0	0	100
	02/15/99	0	0	3.2	3.2	0	0	100
	11/29/99	0	0	4.4	4.4	0	0	100
	06/17/03	1.8	**20**	**20**	41.8	4.3	47.8	47.8
MW-102M	05/20/98	0	0	**15**	15	0	0	100
	08/25/98	0	0	**13**	13	0	0	100
	11/10/98	0	0	**13**	13	0	0	100
	02/11/99	0	0	**8.7**	8.7	0	0	100
	11/19/99	0	0	**8.2**	8.2	0	0	100
	06/13/03	0	0	1.4	1.4	0	0	100
MW-105M	05/26/98	0	0	**41**	41	0	0	100
	08/25/98	0.73	0	**32**	32.73	2.2	0	97.8
	11/06/98	0	0	**36**	36	0	0	100
	02/09/99	0.83	0.56	**37**	38.39	2.2	1.5	96.4
	11/29/99	0	0.66	**40**	40.66	0	1.6	98.4
	06/04/01	0.8	2	**53**	55.8	1.4	3.6	95.0
	06/12/03	0	**7.5**	**41**	48.5	0	15.5	84.5
MW-106M	05/26/98	0	2.8	0	2.8	0	100	0
	08/27/98	0	2.6	0	2.6	0	100	0
	11/10/98	0	3.5	0	3.5	0	100	0
	02/17/99	0	2.6	0	2.6	0	100	0

TABLE 3-6
Data Set for Figure 3-27
Chemical Fingerprints of NCP and WOC Wells Prior to Canal Lining
(Groundwater Mound Dissipating)

Well ID	Date Sampled	1,1-DCE (µg/L)	PCE (µg/L)	TCE (µg/L)	TOTAL CONCENTRATION	Data for trilinear plot (Figure 3-22)		
						% 11DCE	% PCE	% TCE
MW-106M	11/19/99	0	4.1	0	4.1	0	100	0
	06/13/03	0	3.2	0	3.2	0	100	0
North Canal Plume (NCP) Wells								
DEC-1	09/19/02	23	150	9.70	182.7	5.3	12.6	82.1
	03/12/03	37	220	12	269.0	4.5	13.8	81.8
	06/03/03	38	220	12	270.0	4.4	14.1	81.5
DJM-6	05/04/01	0	2	0	2.0	0	0	100
	06/04/01	0.50	6	0	6.5	0	7.7	92.3
	07/06/01	0.40	6	0.40	6.8	5.9	5.9	88.2
	10/04/01	0	5	0	5.0	0	0	100
	01/09/02	0.50	6	0.40	6.9	5.8	7.2	87
	04/10/02	1.1	7.5	0.92	9.52	9.7	11.6	78.8
	09/19/02	0.58	6.3	0.53	7.41	7.2	7.8	85
	12/12/02	0.53	8.4	2.7	11.63	23.2	4.6	72.2
	03/12/03	0.68	7.6	1.7	9.98	17	6.8	76.2
	06/03/03	0.49	5.0	1.5	6.99	21.5	7	71.5
	03/23/04	0	2.2	0	2.2	0	0	100
WCP-1	05/15/92	12	16.7	9.6	38.3	25.1	31.3	43.6
	06/24/92	13	15	12	40	30	32.5	37.5
	12/03/92	14	19	9.2	42.2	21.8	33.2	45
	01/24/94	9.9	12	4.9	26.8	18.3	36.9	44.8
	02/07/96	9.7	18	5.6	33.3	16.8	29.1	54.1
WCP-12	02/06/96	2	2.2	0	4.2	0	47.6	52.4
	11/25/96	1.4	0.71	0	2.11	0	66.4	33.6
	02/06/97	1.4	1.10	0	2.5	0	56	44
	05/09/97	2.5	0.53	0	3.03	0	82.5	17.5
	08/05/97	2.1	0.99	0	3.09	0	68	32
	11/14/97	1.4	0.74	0	2.14	0	65.4	34.6
	02/18/98	1.2	1.0	0.00	2.2	0	54.5	45.5
WCP-14	07/10/92	0	290	1.5	291.5	0.5	0	99.5
	12/29/99	690	520	89	1299	6.9	53.1	40
	02/02/00	440	320	60	820	7.3	53.7	39
WCP-210	04/08/05	17	97	24	138	17.4	12.3	70.3
	06/09/05	11	87	22	120	18.3	9.2	72.5
WCP-211	04/08/05	3.1	18	0.75	21.9	3.4	14.2	82.4
	06/08/05	1.4	9	0	10.4	0	13.5	86.5
WCP-25	02/06/96	2.7	1.9	0	4.6	0	58.7	41.3
	05/04/01	1	66	49	116	42.2	0.9	56.9
	06/04/01	1	61	49	111	44.1	0.9	55
	07/06/01	1	67	49	117	41.9	0.9	57.3
	10/04/01	2	64	37	103	35.9	1.9	62.1
	01/09/02	1	63	39	103	37.9	1	61.2
	04/10/02	2	61	36	99	36.4	2	61.6
	09/19/02	1.8	64	47	112.8	41.7	1.6	56.7
	12/12/02	4.1	110	68	182.1	37.3	2.3	60.4
	06/03/03	2.5	100	56	158.5	35.3	1.6	63.1
	03/23/04	0	43	39	82.0	47.6	0	52.4
	06/23/04	1.7	55	41	97.7	42	1.7	56.3
	09/17/04	0.86	47	37	84.9	43.6	1	55.4

TABLE 3-6
Data Set for Figure 3-27
Chemical Fingerprints of NCP and WOC Wells Prior to Canal Lining
(Groundwater Mound Dissipating)

Well ID	Date Sampled	1,1-DCE (µg/L)	PCE (µg/L)	TCE (µg/L)	TOTAL CONCENTRATION	Data for trilinear plot (Figure 3-22)		
						% 11DCE	% PCE	% TCE
WCP-25	01/14/05	2.1	49	30	81.1	37.0	2.6	60.4
	03/30/05	1.8	52	34	87.8	38.7	2.1	59.2
	06/09/05	1.2	55	40	96.2	41.6	1.2	57.2
WCP-26	05/04/01	1	100	64	165	38.8	0.6	60.6
	06/04/01	3	96	75	174	43.1	1.7	55.2
	07/06/01	3	91	65	159	40.9	1.9	57.2
	07/06/01	3	91	63	157	40.1	1.9	58
	10/04/01	5	82	56	143	39.2	3.5	57.3
	10/04/01	5	82	56	143	39.2	3.5	57.3
	01/09/02	4	83	59	146	40.4	2.7	56.8
	04/10/02	4.5	82	62	148.5	41.8	3	55.2
	09/19/02	4.7	110	76	190.7	39.9	2.5	57.7
	12/12/02	9.4	160	75	244.4	30.7	3.8	65.5
	03/12/03	8.8	270	120	398.8	30.1	2.2	67.7
	06/03/03	8.4	290	140	438.4	31.9	1.9	66.1
	03/24/04	1.6	85	51	137.6	37.1	1.2	61.8
	06/24/04	4.2	100	60	164.2	36.5	2.6	60.9
	09/17/04	3	74	46	123	37.4	2.4	60.2
WCP-26	01/13/05	4.4	86	45	135.4	33.2	3.2	63.5
	03/29/05	4.3	83	55	142.3	38.7	3	58.3
	06/09/05	2.1	92	58	152.1	38.1	1.4	60.5
WCP-27	01/14/05	8.7	140	49	197.7	24.8	4.4	70.8
	03/29/05	9.3	130	44	183.3	24	5.1	70.9
	06/09/05	7.3	130	53	190.3	27.9	3.8	68.3
WCP-62	05/04/01	0	0.40	0	0.4	0	0	100
	07/06/01	0	0.30	0	0.3	0	0	100
	01/09/02	0	0.50	0	0.5	0	0	100
	04/10/02	1.2	0.40	0	1.6	0	75	25
	09/19/02	0	0.25	0	0.3	0	0	100
	06/23/04	0	1.4	0	1.4	0	0	100
	09/17/04	0	1.8	0	1.8	0	0	100
	01/13/05	0	2.2	0	2.2	0	0	100
	03/28/05	0	2.4	0	2.4	0	0	100
	06/07/05	0	1.9	0	1.9	0	0	100
WCP-7	06/30/92	2.9	74	36	112.9	31.9	2.6	65.5
	07/28/92	2.6	51	13	66.6	19.5	3.9	76.6
	12/04/92	0	320	78	398	19.6	0	80.4
	01/24/94	0	190	33	223	14.8	0	85.2
	02/08/96	1.8	76	13	90.8	14.3	2.0	83.7
	02/18/96	1.8	76	13	90.8	14.3	2.0	83.7

Notes:
µg/L = micrograms per liter
1,1-DCE = 1,1 Dichloroethene
PCE = Tetrachloroethene
TCE = Trichloroethene
Percentages for the trilinear plot have been rounded to one significant figure for this table.

TABLE 3-7
Data Set for Figure 3-28
Chemical Fingerprints of NCP and WOC After Canal Lining 2004-2008
(Groundwater Mound Absent)

Well ID	Date Sampled	1,1-DCE (µg/L)	PCE (µg/L)	TCE (µg/L)	TOTAL CONCENTRATION	Data for trilinear plot (Figure 3-23)		
						% 11DCE	% PCE	% TCE
West Osborn Complex (WOC) LSGS Post-Lining								
ARCO MW-2	06/27/05	0	0	0	0	0	0	0
	09/14/06	0	0	0	0	0	0	0
MW-203M	06/15/05	0	0	0	0	0	0	0
	07/07/05	0	0	0	0	0	0	0
	09/15/06	0	0	0	0	0	0	0
	09/20/07	0	0	0	0	0	0	0
	05/01/08	0	0	0.53	0.5	0	0	100
	09/02/08	0	0	0	0	0	0	0
MW-2M	01/16/04	0	**11**	**45**	56	0	19.6	80.4
	07/01/05	0.67	**11**	**59**	70.7	0.9	15.6	83.5
	09/13/06	0	**12**	**56**	68	0	17.6	82.4
	09/19/07	0.56	**12**	**46**	58.6	1	20.5	78.6
	05/02/08	0	**7.8**	**35**	42.8	0	18.2	81.8
	09/04/08	0	**9.4**	**39**	48.4	0	19.4	80.6
MW-3M	01/12/04	0	**9.6**	0	9.6	0	100	0
MW-4M	01/15/04	0	**27**	**14**	41	0	65.9	34.1
	07/01/05	1	**31**	**15**	47	2.1	66	31.9
	09/13/06	1.3	**21**	**13**	35.3	3.7	59.5	36.8
	09/19/07	1.4	**15**	**14**	30.4	4.6	49.3	46.1
	05/02/08	0	**10**	**8**	18	0	55.6	44.4
	09/03/08	0	**11**	**9.6**	20.6	0	53.4	46.6
MW-6M	01/14/04	0	0	**19**	19	0	0	100
	07/01/05	0	0.72	**14**	14.7	0	4.9	95.1
	09/12/06	0	0	**56**	56	0	0	100
	09/18/07	0	0	**45**	45	0	0	100
	05/02/08	0	0	**9.7**	9.7	0	0	100
	09/05/08	0	0	**20**	20	0	0	100
MW-7M	01/14/04	1.9	**20**	**22**	43.9	4.3	45.6	50.1
MW-102M	01/15/04	0	0	1.1	1.1	0	0	100
MW-105M	01/15/04	0	**8.9**	**36**	45	0	19.8	80.2
	06/30/05	0.66	**13**	**47**	61	1.1	21.4	77.5
	09/18/06	1.9	**13**	**60**	75	2.5	17.4	80.1
	09/19/07	1.4	**12**	**46**	59	2.4	20.2	77.4
	05/03/08	0	**11**	**46**	57	0	19.3	80.7
	09/05/08	2.6	**13**	**60**	76	3.4	17.2	79.4
MW-106M	01/14/04	0	3	0	3	0	100	0
North Canal Plume (NCP) Wells								
DEC-1	09/19/02	23	150	9.70	182.7	5.3	12.6	82.1
	03/12/03	37	220	12	269.0	4.5	13.8	81.8
	06/03/03	38	220	12	270.0	4.4	14.1	81.5
DJM-6	05/04/01	0	2	0	2.0	0	0	100
	06/04/01	0.50	6	0	6.5	0	7.7	92.3
	07/06/01	0.40	6	0.40	6.8	5.9	5.9	88.2
	10/04/01	0	5	0	5.0	0	0	100
	01/09/02	0.50	6	0.40	6.9	5.8	7.2	87
	04/10/02	1.1	7.5	0.92	9.52	9.7	11.6	78.8
	09/19/02	0.58	6.3	0.53	7.41	7.2	7.8	85
	12/12/02	0.53	8.4	2.7	11.63	23.2	4.6	72.2

TABLE 3-7
Data Set for Figure 3-28
Chemical Fingerprints of NCP and WOC After Canal Lining 2004-2008
(Groundwater Mound Absent)

Well ID	Date Sampled	1,1-DCE (µg/L)	PCE (µg/L)	TCE (µg/L)	TOTAL CONCENTRATION	Data for trilinear plot (Figure 3-23)		
						% 11DCE	% PCE	% TCE
DJM-6	03/12/03	0.68	7.6	1.7	9.98	17	6.8	76.2
	06/03/03	0.49	5.0	1.5	6.99	21.5	7	71.5
	03/23/04	0	2.2	0	2.2	0	0	100
WCP-1	05/15/92	12	16.7	9.6	38.3	25.1	31.3	43.6
	06/24/92	13	15	12	40	30	32.5	37.5
	12/03/92	14	19	9.2	42.2	21.8	33.2	45
	01/24/94	9.9	12	4.9	26.8	18.3	36.9	44.8
	02/07/96	9.7	18	5.6	33.3	16.8	29.1	54.1
WCP-12	02/06/96	2	2.2	0	4.2	0	47.6	52.4
	11/25/96	1.4	0.71	0	2.11	0	66.4	33.6
	02/06/97	1.4	1.10	0	2.5	0	56	44
	05/09/97	2.5	0.53	0	3.03	0	82.5	17.5
	08/05/97	2.1	0.99	0	3.09	0	68	32
	11/14/97	1.4	0.74	0	2.14	0	65.4	34.6
	02/18/98	1.2	1.0	0.00	2.2	0	54.5	45.5
WCP-14	07/10/92	0	290	1.5	291.5	0.5	0	99.5
	12/29/99	690	520	89	1299	6.9	53.1	40
	02/02/00	440	320	60	820	7.3	53.7	39
WCP-210	04/08/05	17	97	24	138	17.4	12.3	70.3
	06/09/05	11	87	22	120	18.3	9.2	72.5
WCP-211	04/08/05	3.1	18	0.75	21.9	3.4	14.2	82.4
	06/08/05	1.4	9	0	10.4	0	13.5	86.5
WCP-25	02/06/96	2.7	1.9	0	4.6	0	58.7	41.3
	05/04/01	1	66	49	116	42.2	0.9	56.9
	06/04/01	1	61	49	111	44.1	0.9	55
	07/06/01	1	67	49	117	41.9	0.9	57.3
	10/04/01	2	64	37	103	35.9	1.9	62.1
	01/09/02	1	63	39	103	37.9	1	61.2
	04/10/02	2	61	36	99	36.4	2	61.6
	09/19/02	1.8	64	47	112.8	41.7	1.6	56.7
	12/12/02	4.1	110	68	182.1	37.3	2.3	60.4
	06/03/03	2.5	100	56	158.5	35.3	1.6	63.1
	03/23/04	0	43	39	82.0	47.6	0	52.4
	06/23/04	1.7	55	41	97.7	42	1.7	56.3
	09/17/04	0.86	47	37	84.9	43.6	1	55.4
	01/14/05	2.1	49	30	81.1	37.0	2.6	60.4
	03/30/05	1.8	52	34	87.8	38.7	2.1	59.2
	06/09/05	1.2	55	40	96.2	41.6	1.2	57.2
WCP-26	05/04/01	1	100	64	165	38.8	0.6	60.6
	06/04/01	3	96	75	174	43.1	1.7	55.2
	07/06/01	3	91	65	159	40.9	1.9	57.2
	07/06/01	3	91	63	157	40.1	1.9	58
	10/04/01	5	82	56	143	39.2	3.5	57.3
	10/04/01	5	82	56	143	39.2	3.5	57.3
	01/09/02	4	83	59	146	40.4	2.7	56.8
	04/10/02	4.5	82	62	148.5	41.8	3	55.2
	09/19/02	4.7	110	76	190.7	39.9	2.5	57.7
	12/12/02	9.4	160	75	244.4	30.7	3.8	65.5

TABLE 3-7
Data Set for Figure 3-28
Chemical Fingerprints of NCP and WOC After Canal Lining 2004-2008
(Groundwater Mound Absent)

Well ID	Date Sampled	1,1-DCE (µg/L)	PCE (µg/L)	TCE (µg/L)	TOTAL CONCENTRATION	Data for trilinear plot (Figure 3-23)		
						% 11DCE	% PCE	% TCE
WCP-26	03/12/03	8.8	270	120	398.8	30.1	2.2	67.7
	06/03/03	8.4	290	140	438.4	31.9	1.9	66.1
	03/24/04	1.6	85	51	137.6	37.1	1.2	61.8
	06/24/04	4.2	100	60	164.2	36.5	2.6	60.9
	09/17/04	3	74	46	123	37.4	2.4	60.2
	01/13/05	4.4	86	45	135.4	33.2	3.2	63.5
	03/29/05	4.3	83	55	142.3	38.7	3	58.3
	06/09/05	2.1	92	58	152.1	38.1	1.4	60.5
WCP-27	01/14/05	8.7	140	49	197.7	24.8	4.4	70.8
	03/29/05	9.3	130	44	183.3	24	5.1	70.9
	06/09/05	7.3	130	53	190.3	27.9	3.8	68.3
WCP-62	05/04/01	0	0.40	0	0.4	0	0	100
	07/06/01	0	0.30	0	0.3	0	0	100
	01/09/02	0	0.50	0	0.5	0	0	100
	04/10/02	1.2	0.40	0	1.6	0	75	25
	09/19/02	0	0.25	0	0.3	0	0	100
	06/23/04	0	1.4	0	1.4	0	0	100
	09/17/04	0	1.8	0	1.8	0	0	100
	01/13/05	0	2.2	0	2.2	0	0	100
	03/28/05	0	2.4	0	2.4	0	0	100
	06/07/05	0	1.9	0	1.9	0	0	100
WCP-7	06/30/92	2.9	74	36	112.9	31.9	2.6	65.5
	07/28/92	2.6	51	13	66.6	19.5	3.9	76.6
	12/04/92	0	320	78	398	19.6	0	80.4
	01/24/94	0	190	33	223	14.8	0	85.2
	02/08/96	1.8	76	13	90.8	14.3	2.0	83.7
	02/18/96	1.8	76	13	90.8	14.3	2.0	83.7

Notes:
µg/L = micrograms per liter
1,1-DCE = 1,1 Dichloroethene
PCE = Tetrachloroethene
TCE = Trichloroethene
Percentages for the trilinear plot have been rounded to one significant figure for this table.

TABLE 4-1
SVE Operation Data Including
Estimated Mass Removal of VOCs

Operation Period	SVE Operation Hours	SVE Operation Days	Ave SVE Flow Rate[1] (scfm)	Ave Total VOC Concen[2] (mg/m^3)	Treated Discharge VOC Concen (mg/m^3)	VOC Mass Removal Rate (lbs/day)	VOC Mass Discharge Rate (lbs/day)	Mass VOCs Removed/Treated[3] (lbs)
1999								
08/04-08/12	9.00	0.38	48	325	0	1.40	0.00	0.53
08/12-08/30	54.30	2.26	119	325	0	3.48	---	7.88
08/30-09/20	57.92	2.41	136	325	0	3.98	---	9.60
09/20-10/21	311.13	12.96	136	325	0	3.98	0.00	51.57
10/21-12/21	963.78	40.16	152	167	0	2.28	0.00	91.74
2000								
12/21-02/09	876.99	36.54	152	167	0	2.28	0.00	83.48
02/09-02/21	287.15	11.96	115	167	0	1.73	0.00	20.68
02/21-02/28	170.54	7.11	122	80	0	0.88	0.00	6.24
02/28-04/18	1100.47	45.85	132	80	0	0.95	0.00	43.58
04/18-05/23	793.54	33.06	132	50	0	0.59	0.00	19.64
05/23-06/23	718.44	29.94	94	40	0	0.34	0.00	10.13
06/23-07/10	397.60	16.57	94	40	0	0.34	0.00	5.61
07/10-10/11	859.03	35.79	98	36	0	0.32	0.00	11.36
10/11-12/14	1100.93	45.87	122	36	0	0.40	0.00	18.13
12/14-12/31	422.00	17.58	122	24	0	0.26	0.00	4.63
2001								
01/01-01/25	588.00	24.50	135	24	0	0.29	0.00	7.14
01/25-02/14	482.87	20.12	136	24	0	0.29	0.00	5.91
02/14-05/17	673.64	28.07	131	22	0	0.26	0.00	7.28
05/17-08/23	529.29	22.05	126	22	0	0.25	0.00	5.50
08/23-10/17	1023.37	42.64	142	16	0	0.20	0.00	8.72
10/17-12/31	1149.89	47.91	163	11	0	0.16	0.00	7.73
2002								
01/01-02/07	530.33	22.10	165	11.0	0	0.16	0.00	3.61
02/07-05/03	1923.45	80.14	167	8.5	0	0.13	0.00	10.24
05/03-09/12	1737.93	72.41	142	6.9	0	0.09	0.00	6.39
09/12-10/21	771.98	32.17	145	5.3	0	0.07	0.00	2.22
TOTALS	**17,533.57**	**730.57**						**449.55**

SVE = soil vapor extraction

VOCs = volatile organic compounds

scfm = standard cubic feet per minute, using 70 ^{o}F and 14.7 psi absolute for standard air.

mg/m^3 = milligrams per cubic meter (total detected contaminant mass per unit volume)

1 = The SVE rate was determined by converting a direct field measurement of air velocity measured from the system plumbing (3-in. ID). Temperature and pressure readings were also collected to allow conversion from actual to standard cubic feet per minute, based on standard air (70 ^{o}F and 14.7 psi absolute).

2 = Average concentrations of untreated extraction vapor based on available analytical data.

3 = Represents total estimated mass of VOCs extracted from soil and treated to remove VOCs prior to discharge into the atmosphere.

Table 5-1
Cost Analysis for Air Stripping Only Treatment Option
West Osborn Complex WQARF Site, Phoenix, Arizona

Estimated Capital Costs for Air Stripping Only Treatment Option--750 GPM System		
Category	**Estimated Cost**	
Furnish and Install Air Stripper	$180,000	Carbonair STAT 720
Electrical Power, Distribution, and Controls	$75,000	
Concrete Foundation w/Containment, Collection Sump, Canopy,Yard Piping, Flow Meters, Block Fenced Compound	$170,000	
Engineering, Permitting, H&S, CM, Start-up, Contingency (25%)	$106,250	
Total Capital Costs[1]	**$531,250**	

Estimated Annual O&M for Air Stripping Only Treatment Option--750 GPM System		
Category	**Estimated Units & Unit Costs**	**Estimated Cost**
Labor		
-- O&M Operator	Ave 10 hrs/mo @ $70/hr	$8,400
-- O&M Mgmt./Engineering	Ave 4 hr/mo @ $130/hr	$6,240
Electric Power, EW Pump (85 HP) and Air Stripper Blower (40 HP) @ 25% Run Time[2]	408,435 kw-hrs @ $0.14/kw-hr	$28,590
Anti-Scalent Chemicals for Air Stripper (Flow-Proportional Feed Pump Additions)	Ave 15 gals/mo @ $8.75/gal	$1,575
Performance Sampling (Lab Analysis) for EW, AS Influent, Treated Effluent	Ave 2 samples/mo @ $120/sample	$2,880
Maintenance	Varies	$3,500
Total Annual O&M Costs		**$51,185**

Estimated Life-Cycle Costs for Air Stripping Only Treatment Option--750 GPM System		
Capital Costs	$531,250	
Annual O&M Costs (30 years)	$1,535,564	
Future Cost: Replace Worn-out Air Stripper in Year 20	$180,000	
30-Year Life-Cycle Costs	**$2,246,814**	
Net Present Value of 30 Year Life-Cycle Costs, Discounted at 7%	**$1,212,922**	

GPM = gallons per minute
O&M = operation and maintenance
kw-hr = kilowatt-hours
EW = extraction well
HP = horsepower
CM = construction management
H&S = health & safety
AS = air stripping

Table format adopted from Cost Effective Design of Pump and Treat Systems, EPA, 2005.

[1]Capital costs exclude EW and submersible pump installations, and electrical service & distribution for well pumps.

These costs are the same for each of the other four 750 GPM P&T alternatives.

[2]Assumed 25% represents average intermittent operating time for a well pumping system at COP-70/71 (see Section 6.0).

Table 5-2
Cost Analysis for AS with VGAC Treatment Option
West Osborn Complex WQARF Site, Phoenix, Arizona

Estimated Capital Costs for Air Stripping with VGAC Treatment--750 GPM System		
Category	**Estimated Cost**	
Furnish and Install Air Stripper	$180,000	Carbonair STAT 720
VGAC Units for Off-Gas Treatment	$55,000	(2) 5,000 lb units
		(Prominent Systems)
Electrical Power, Distribution, and Controls	$85,000	
Concrete Foundation w/Containment, Collection Sump, Canopy,Yard Piping, Flow Meters, Block Fenced Compound	$190,000	
Engineering, H&S, CM, Start-up, Contingency (25%)	$127,500	
Total Capital Costs[1]	**$637,500**	

Estimated Annual O&M for Air Stripping with VGAC Treatment--750 GPM System		
Category	**Estimated Units & Unit Costs**	**Estimated Cost**
Labor		
-- O&M Operator	Ave 10 hrs/mo @ $70/hr	$8,400
-- O&M Mgmt./Engineering	Ave 4 hr/mo @ $130/hr	$6,240
Electric Power, EW Pump (85 HP) and Air Stripper Blower (40 HP) @ 25% Run Time[2]	408,435 kw-hrs @ $0.14/kw-hr	$28,590
VGAC Usage (Ave Siemens & Prominent Isotherms @ 25% Run Time)	68 lbs/day @ $1.00/lb	$6,205
Anti-Scalent Chemicals for Air Stripper (Flow-Proportional Feed Pump Additions)	Ave 15 gals/mo @ $8.75/gal	$1,575
Perform. Sampling (Lab Analysis) for EW, Water Influent, Vapor from Lag VGAC Unit, and Treated Water Effluent	Ave 2 samples/mo @ $120/sample	$2,880
Maintenance	Varies	$4,000
Total Capital Costs[1]		**$57,890**

Estimated Life-Cycle Costs for Air Stripping with VGAC Treatment--750 GPM System		
Capital Costs	$637,500	
Annual O&M Costs (30 years)	$1,736,714	
30 Year Life-Cycle Costs	**$2,374,214**	
Future Cost: Replace Worn-out Air Stripper in Year 20	$180,000	
Net Present Value of 30 Year Life-Cycle Costs, Discounted at 7%	**$1,402,375**	

AS = air stripping
VGAC = vapor-phase granular activated carbon
GPM - gallons per minute
O&M = operation and maintenance
kw-hr = kilowatt-hours
EW = extraction well
HP = horsepower
CM = construction management
H&S = health & safety
U.G. = underground

Table format adopted from Cost Effective Design of Pump and Treat Systems, EPA, 2005.

[1]Capital costs exclude EW and submersible pump installations, and electrical service & distribution for well pumps.

These costs are the same for each of the other four 750 GPM P&T alternatives.

[2]Assumed 25% represents average intermittent operating time for a well pumping system at COP-70/71 (see Section 6.0).

Table 5-3
Cost Analysis for AS with LGAC Treatment Option
West Osborn Complex WQARF Site, Phoenix, Arizona

Estimated Capital Costs for Air Stripping with LGAC Treatment--750 GPM System		
Category	**Estimated Cost**	
Furnish and Install Air Stripper	$180,000	Carbonair STAT 720
(1) Liquid GAC Polishing Unit and (2) Bag Filters	$125,000	(1)10,000 lb unit
		(Carbonair PC 78)
Electrical Power, Distribution, and Controls	$85,000	
Concrete Foundation w/Containment, Collection Sump, U.G. Backwash Tank, Canopy,Yard Piping, Flow Meters, Block Fenced Compound	$200,000	
Engineering, H&S, CM, Start-up, Contingency (25%)	$147,500	
Total Capital Costs[1]	**$737,500**	

Estimated Annual O&M for Air Stripping with LGAC Treatment--750 GPM System		
Category	**Estimated Units & Unit Costs**	**Estimated Cost**
Labor		
-- O&M Operator	Ave 10 hrs/mo @ $70/hr	$8,400
-- O&M Mgmt./Engineering	Ave 4 hr/mo @ $130/hr	$6,240
Electric Power, EW Pump (85 HP) and Air Stripper Blower (40 HP) @ 25% Run Time[2]	408,435 kw-hrs @ $0.14/kw-hr	$28,590
LGAC Usage (Ave Siemens & Prominent Isotherms @ 25% Run Time)	36 lbs/day @ $1.00/lb	$3,285
Anti-Scalent Chemicals for Air Stripper (Flow-Proportional Feed Pump Additions)	Ave 15 gals/mo @ $8.75/gal	$1,575
Perform. Sampling (Lab Analysis) for EW, Influent to AS and LGAC Unit, Treated Effluent	Ave 2 samples/mo @ $120/sample	$2,880
Maintenance	Varies	$4,000
Total Annual O&M Costs		**$54,970**

Estimated Life-Cycle Costs for Air Stripping with LGAC Treatment--750 GPM System		
Capital Costs	$737,500	
Annual O&M Costs (30 years)	$1,649,114	
30 Year Life-Cycle Costs	**$2,386,614**	
Future Cost: Replace Worn-out Air Stripper in Year 20	$180,000	
Net Present Value of 30 Year Life-Cycle Costs, Discounted at 7%	**$1,466,140**	

AS = air stripping
LGAC = liquid-phase granular activated carbon
GPM - gallons per minute
O&M = operation and maintenance
kw-hr = kilowatt-hours
EW = extraction well
HP = horsepower
CM = construction management
H&S = health & safety
U.G. = underground

Table format adopted from Cost Effective Design of Pump and Treat Systems, EPA, 2005.

[1]Capital costs exclude EW and submersible pump installations, and electrical service & distribution for well pumps.
These costs are the same for each of the other four 750 GPM P&T alternatives.

[2]Assumed 25% represents average intermittent operating time for a well pumping system at COP-70/71 (see Section 6.0).

Table 5-4
Cost Analysis for AS with VGAC and
LGAC Treatment Option
West Osborn Complex WQARF Site, Phoenix, Arizona

Estimated Capital Costs for Air Stripping with VGAC and LGAC Treatment--750 GPM System		
Category	**Estimated Cost**	
Furnish and Install Air Stripper	$180,000	Carbonair STAT 720
(1) Liquid GAC Polishing Unit and (2) Bag Filters	$125,000	(1)10,000 lb unit
		(Carbonair PC 78)
VGAC Units for Off-Gas Treatment	$55,000	(2) 5,000 lb units
		(Prominent Systems)
Electrical Power, Distribution, and Controls	$100,000	
Concrete Foundation w/Containment, Collection Sump, U.G. Backwash Tank, Canopy,Yard Piping, Flow Meters, Block Fenced Compound	$215,000	
Engineering, H&S, CM, Start-up, Contingency (25%)	$168,750	
Total Capital Costs[1]	**$843,750**	

Estimated Annual O&M for Air Stripping with VGAC and LGAC Treatment--750 GPM System		
Category	**Estimated Units & Unit Costs**	**Estimated Cost**
Labor		
-- O&M Operator	Ave 14 hrs/mo @ $70/hr	$11,760
-- O&M Mgmt./Engineering	5 hr/mo @ $130/hr	$7,800
Electric Power, EW Pump (85 HP) and Air Stripper Blower (40 HP) @ 25% Run Time[2]	408,435 kw-hrs @ $0.14/kw-hr	$28,590
VGAC Usage (Ave Siemens & Prominent Isotherms @ 25% Run Time)	68 lbs/day @ $1.00/lb	$6,205
LGAC Usage (Ave Siemens & Prominent Isotherms @ 25% Run Time)	36 lbs/day @ $1.00/lb	$3,285
Anti-Scalent Chemicals for Air Stripper (Flow-Proportional Feed Pump Additions)	15 gals/mo @ $8.75/gal	$1,575
Perform. Sampling (Lab Analysis) for EW, Influent Water to AS and LGAC Unit, Vapor Discharge and Treated Water Effluent	Ave 4 samples/mo @ $120/sample	$5,760
Maintenance	Varies	$6,000
Total Annual O&M Costs		**$70,975**

Estimated Life-Cycle Costs for Air Stripping w/VGAC and LGAC Treatment--750 GPM System		
Capital Costs	$843,750	
Annual O&M Costs (30 years)	$2,129,264	
30 Year Life-Cycle Costs	**$2,973,014**	
Future Cost: Replace Worn-out Air Stripper in Year 20	$180,000	
Net Present Value of 30 Year Life-Cycle Costs, Discounted at 7%	**$1,770,996**	

AS = air stripping
LGAC = liquid-phase granular activated carbon
GPM - gallons per minute
O&M = operation and maintenance
kw-hr = kilowatt-hours
VGAC = vapor-phase granular activated carbon
HP = horsepower
CM = construction management
H&S = health & safety
U.G. = underground

Table format adopted from Cost Effective Design of Pump and Treat Systems, EPA, 2005.

[1]Capital costs exclude EW and submersible pump installations, and electrical service & distribution for well pumps.
These costs are the same for each of the other four 750 GPM P&T alternatives.

[2]Assumed 25% represents average intermittent operating time for a well pumping system at COP-70/71 (see Section 6.0).

Table 5-5
Cost Analysis for LGAC Only Treatment Option
West Osborn Complex WQARF Site, Phoenix, Arizona

Estimated Capital Costs for LGAC Only Treatment Option--750 GPM System		
Category	**Estimated Cost**	
(2) LGAC Units, Manifold, and (2) Bag Filters	$200,000	Siemens HP-810
		(2) Eaton MBE HE
Electrical Power, Distribution, and Controls	$60,000	
Concrete Foundation w/ Containment, U.G. Backwash Tank, Canopy, Yard Piping, Flow Meters, Block Fenced Compound	$175,000	
Engineering, Permitting, H&S, CM, Start-up, Contingency (25%)	$108,750	
Total Capital Costs	**$543,750**	

Estimated Annual O&M for LGAC Only Treatment Option--750 GPM System		
Category	**Estimated Units & Unit Costs**	**Estimated Cost**
Labor		
-- O&M Operator	Ave 8 hrs/mo @ $70/hr	$6,720
-- O&M Mgmt./Engineering	Ave 3 hr/mo @ $130/hr	$4,680
Electric Power, EW Pump (85 HP) @ 25% Run Time	277,736 kw-hrs @ $0.14/kw-hr	$19,442
LGAC Usage (Ave Siemens & Prominent Isotherms @ 25% Run Time)[2]	249 lbs/day @ $1.00/lb	$22,721
LGAC Change-out Service	2 events @ 1,500 ea	$3,000
Performance Sampling (Lab Analysis) for Each EW, Influent to Each LGAC Unit, Treated Effluent	Ave 4 samples/mo @ $120/sample	$5,760
Maintenance (Equip. or Controls, Supplies, etc.)	Varies	$2,500
Total Capital Costs[1]		**$64,823**

Estimated Life-Cycle Costs for LGAC Only Treatment Option--750 GPM System		
Capital Costs	$543,750	
Annual O&M Costs (30 years)	$1,944,683	
30-Year Life-Cycle Costs	**$2,488,433**	
Net Present Value of 30-Year Life-Cycle Costs, Discounted at 7%	**$1,348,136**	

GPM - gallons per minute
LGAC = liquid-phase granular activated carbon
O&M = operation and maintenance
kw-hr = kilowatt-hours
EW = extraction well
HP = horsepower
CM = construction management
H&S = health & safety
U.G. = underground
AS = air stripping

Table format adopted from Cost Effective Design of Pump and Treat Systems, EPA, 2005.

[1]Capital costs exclude EW and submersible pump installations, and electrical service & distribution for well pumps.
These costs are the same for each of the other four 750 GPM P&T alternatives.

[2]Assumed 25% represents average intermittent operating time for a well pumping system at COP-70/71 (see Section 6.0).

Table 5-6
Summary of Production Well Construction Data

Well	Year Drilled	Total Depth (ft)	Casing Diameter (in)	Perforated Interval (ft)	Capacity (gpm)
SRP Wells					
8.5E-7.5N	1948	700	20	255-685	1,600
9.5E-7.7N	1948	700	20	220-685	2,600
10.5E-7.5N	1949	698	20	210-680	3,200
COP Wells					
68	1953	434	12	NA	650
70	1955	701	16	NA	600
71	1957	545	16	260-441	800
151	1962	650	12	210-598	750
152	1957	630	16/12	275-465	1,320

NA = not available
ft = feet
in = inches
SRP = Salt River Project
COP = City of Phoneix

Note: Capacity of SRP production wells is based on average of capacity tests completed by SRP from 1990 through 1993.

Table 5-7
Cost Estimates for SRP Production Well Remedy Alternatives

CAPITAL	ALTERNATIVE					
	1a	1b	2a	2b	3	4
Well Modifications and/or Deepening	$40,000	$80,000	$675,000	$1,150,000	$0	$0
Treatment Equipment and Installation[1]	$570,000	$1,140,000	$0	$0	$0	$0
Borhole Geophysical Logging (as applicable), Pump Testing, and Waste Management	$30,000	$45,000	$60,000	$80,000	$0	$0
Treatment Plant Compound w/ Electric and Control Upgrades	$110,000	$220,000	$0	$0	$0	$0
Pipeline Installation(s) to Grand Canal[2]	$0	$0	$0	$0	$650,000	$0
Engineering, Permitting, Construction Mgmt (25% of Construction/ Installation)	$187,500	$371,250	$183,750	$307,500	$162,500	$0
Total Capital	$937,500	$1,856,250	$918,750	$1,537,500	$812,500	$0
O&M						
Labor	$12,500	$19,000	$0	$0	$20,000	$0
Liquid GAC[3]	$40,000	$80,000	$0	$0	$0	$0
Replacement Parts or Instruments	$3,000	$6,000	$0	$0	$4,500	$0
System Sampling - GAC and AZPDES	$4,800	$9,600	$0	$0	$7,500	$0
Total Annual O&M	$60,300	$114,600	$0	$0	$32,000	$45,800
Total Cost, 30 Year Life Cycle	$2,746,500	$5,294,250	$918,750	$1,537,500	$1,772,500	$1,374,000
Net Present Value[4]	$1,690,000	$3,280,000	$920,000	$1,540,000	$1,210,000	$570,000

NOTES:

Costs for electric power consumption have been omitted because it is considered SRP's responsibiltiy.

Labor and sampling costs for Alternative 2a and 2b have been omitted because they are considered to be SRP's responsibility.

(1) Assumes installation of two Siemens HP1020SYS treatment systems (4 GAC vessels) for an individual 1500 gpm wellhead treatment system. Also includes estimated costs for bag filter units, yard piping, controls and instrumentation.

(2) Based on a pipeline distances of 4250 linear feet for a downgradient pumping system in the vicinity of MW-108M (see Section 6.0 of FS report).

(3) Assumes 2 primary vessels with 20,000 lbs LGAC each would be changed-out annually at $1/lb for the 1,500 gpm system(s). Note that groundwater pumping would be be performed periodically based on SRP's needs. Thus, LGAC usage costs could be considerably less depending on actual VOC and other organics loading, and fouling.

(4) Based on a 30 year O&M life cycle, 7% discount factor, plus capital cost rounded to $10,000.

Alternative 1a: Modify well 9.5E-7.7N and install 1,500 gpm wellhead treatment plant.

Alternative 1b: Modify wells 8.5E-7.5N and 9.5E-7.7N and install individual 1,500 gpm wellhead treatment systems.

Alternative 2a: Modify/deepen well 9.5E-7.7N to 1,600 feet.

Alternative 2b: Modify/deepen wells 8.5E-7.5N and 9.5E-7.7N to 1,600 feet each.

Alternative 3: Install 4,250 ft and conveyance pipeline from 500 gpm downgradient remedy pump-and-treat systems to Grand Canal (see FS Report Section 6.0).

Alternative 4: Continue a "No Pumping" policy for SRP wells 8.5E-7.5N and 9.5E-7.7N under an SRP/ADEQ agreement. The assumed cost for water potentially available from the CAP in lieu of pumping the production well(s) is $100 per acre-foot, and the pumpage is assumed to be 458 acre feet per year based on the approximate average reported combined pumpage from the two SRP wells over the 10 year period of 1989-1998.

Table 5-8
Cost Estimates for COP 70/71 Well Modifications or Replacements
West Osborn Complex WQARF, Phoenix, Arizona

CAPITAL	ALTERNATIVE	
	1	2
Well Rehabilitation/Modification	$255,000	$0
Drill/Install Replacement Wells	$0	$425,000
Well Abandonments	$0	$52,000
Waste Management (drilling muds, well development water, contracting)	$5,000	$10,000
Engineering, Permitting, Construction Mgmt (Assumes 25%)	$65,000	$121,750
Total Capital	$325,000	$608,750

NOTES:
Alternative 1: Rehabilitate/modify wells COP 70 and 71 to terminate at bottom of LSGS
Alternative 2: Install new replacement wells for COP 70 & 71, screened through LSGS
LSGS = Lower sand and gravel subunit of the upper alluvial unit

Table 7-1
Cost Estimates for Reference, More Aggressive, and Less Aggressive Remedy Alternatives
FS Report for the LSGS, West Osborn Complex WQARF Site
Phoenix, Arizona

Capital Items	Reference	More Aggressive	Less Aggressive
New Downgradient Extraction Well, Piezometers & Sentinel Well, Aquifer/Pump Test(s), and IDW Management[1]	$40,000	$792,300	$0
Install Conveyance Pipeline in City Right-of-Way Between Downgradient P&T System Treatment Plant and Grand Canal. Includes Headwall Structure at Canal	$0	$602,500	$0
Furnish/Install Well Pump for Downgradient P&T System and Groundwater Treatment Plant(s). Plant(s) to Include Flow Equalization Tank(s), Bag Filters, Transfer Pumps, LGAC Treatment System(s), U.G. Concrete Backwash Tank(s), Concrete Foundation(s) w/ Containment, Canopy, and Block Fence Compound (as applicable)	$350,000	$1,358,500	$0
Install New or Upgraded Electric Power Supplies, Power Distribution, and System Controls	$100,000	$225,000	$0
Land Access for Treatment Compounds (Assumed)	$0	$75,000	$0
Subtotal Capital	$490,000	$3,053,300	$0
Engineering, Permitting, H&S, and CM (25%)	$122,500	$763,325	$0
Total Capital	$612,500	$3,816,625	$0
O&M, MNA and REPORTING			
Annual Labor for O&M	$20,000	$52,050	$0
Annual Electric Power for Well Pump Operation, Excluding COP-70/71 Well Pump Energy Costs[3]	$3,600	$65,186	$0
Annual Liquid GAC Usage[4]	$22,758	$80,428	$0
Annual P&T System Performance and Discharge Sampling Analysis	$3,000	$10,500	$0
Misc. Annual Maintenance of Equipment and/or Pipelines (Ave)	$5,000	$15,000	$0
MNA and Reporting: Years 1 - 2 of LSGS Groundwater Monitoring and Reporting, Plus P&T System Performance Reporting (as applicable)[5]	$115,000	$175,000	$105,000
MNA and Reporting: Years 3 - 30 of LSGS Groundwater Monitoring and Reporting, Plus P&T System Performance Reporting (as applicable)[6]	$75,000	$120,000	$65,000
Total Annual O&M, MNA, and Reporting, Years 1 - 2	$169,358	$398,164	$105,000
Total Annual O&M, MNA, and Reporting, Years 3 - 30	$129,358	$343,164	$65,000
Total O&M, MNA, and Reporting (30 Years)	$3,960,733	$10,404,914	$2,030,000
Total Costs, Capital Plus 30 Years O&M, MNA, and Reporting	$4,573,233	$14,221,539	$2,030,000
Present Value, Capital, 30 Years O&M, MNA, and Reporting[7]	$2,290,000	$8,174,000	$879,000

Reference Remedy: LGAC Treatment System at COP-70/71 Well Site w/Discharge to COP Water Main; Long-Term MNA for Downgradient Plume

More Aggressive Remedy: LGAC Treatment System at COP-70/71 Well Site w/Discharge to COP Water Main; Downgradient P&T System w/ Discharge to Grand Canal; Long-Term Groundwater Monitoring

Less Aggressive Remedy: Long-Term MNA Only for LSGS Groundwater (Entire WOC Site)

[1]Excludes costs for abandoning the two old existing wells and installing two new wells at the COP-70/71 site (see Table 5-6). ADEQ considers these costs to be the responsibility of the COP.
[2]Excludes costs for installing either submersible or turbine style groundwater pumps for two wells at the COP-70/71 site. ADEQ considers these costs to be the responsibiltiy of the COP.
[3]Excludes power costs for operating new well pumps at the COP-70/71 site. ADEQ considers such costs the responsibiltiy of the COP. Assumes 500 gpm extraction well pump for Downgradient P&T System operates 95% of the time w/ average cost of $0.14 per kilowatt-hour for electric power.
[4]Based on avearge of Prominent Systems and Siemens LGAC usage isotherms: 166.3 lbs/day for 500 gpm system (95% operation time) and 249.4 lbs/day for 750 gpm system (25% operation time)
[5]Assumes monthly gauging of water levels and quarterly groundwater sampling and reporting for 13 LSGS monitoring wells. Also includes includes quarterly P&T system(s) performance reporting.
[6]Assumes semi-annual gauging of water levels and groundwater sampling and reporting for all LSGS monitoring wells. Also includes semi-annual P&T system(s) performance reporting.
[7]Capital plus 30 years O&M, MNA, and reporting using a 7% discount factor rounded to 1000.

CM = construction management
LGAC = liquid granular activated carbon
LSGS = lower sand and gravel subunit aquifer
H&S = health and safety
IDW = investigation-derived waste
MNA = monitored natural attenuation
O&M = operation and maintenance
P&T = pump and treat
U.G. = underground

Table 7-2
Cost Estimates for More Aggressive Remedy Alternatives
FS Report for the LSGS, West Osborn Complex WQARF Site, Phoenix, AZ

	ALTERNATIVE		
CAPITAL	**1**	**2**	**3**
New Downgradient Extraction Well, Piezometers & Sentinel Well, Well Aquifer Test(s), and Waste Management[1]	$792,300	$792,300	$792,300
Injection Wells, Vaults, and Waste Management	$0	$309,800	$0
Well Pumps and LGAC Treatment Plants[2]	$1,583,500	$1,583,500	$1,583,500
Pipelines Between Treatment Equipment, and Discharge Locations	$602,500	$406,000	$84,500
Land Access for Treatment Systems (assumed)	$75,000	$70,000	$75,000
Subtotal Capital	$3,053,300	$3,161,600	$2,535,300
Engineering, Permitting, H&S, and CM (25%)	$763,325	$790,400	$633,825
Total Capital	$3,816,625	$3,952,000	$3,169,125
O&M and REPORTING			
Labor	$52,050	$62,050	$42,050
Electric Power for Pump Operation[3][4]	$65,186	$65,186	$65,186
Liquid GAC Usage[5]	$80,428	$80,428	$80,428
P&T System Performance and Discharge Sampling Analysis	$10,500	$8,100	$10,500
Maintenance of Pipelines & Equipment	$15,000	$17,500	$13,500
Maintenance of Injection Wells	$0	$6,500	$0
Groundwater Monitoring & Reporting, Including System Performance Reporting (ave)	$123,667	$123,667	$123,667
Total Annual O&M	$346,831	$363,431	$335,331
Periodic Cost Specific to Injection Wells[6]		$619,600	
Total Cost (30 Years)	$14,221,549	$15,474,524	$13,229,049
Present Value, Capital, O&M, Reporting[7]	$8,174,000	$8,462,000	$7,330,000

Alternative 1: Downgradient P&T w/ Canal Discharge; 2 New COP Production Wells w/ LGAC Treatment at COP-70/71 Site; Continued No Pumping Policy for Well SRP 9.5E-7.7N with Provisions for Replacement Water

Alternative 2: Downgradient P&T w/ IWs Discharge, 2 New COP Production Wells w/ LGAC Treatment at COP-70/71 Site; Continued No Pumping Policy for Well SRP 9.5E-7.7N with Provisions for Replacement Water

Alternative 3: Downgradient P&T w/Storm Sewer Discharge, 2 New COP Production Wells w/ LGAC Treatment at COP-70/71 Site; No Pumping Policy for Well SRP 9.5E-7.7N with Provisions for Replacement Water

[1]Excludes costs for abandoning the two old existing wells and installing up to two new wells at the COP-70/71 site (see Table 5-6). ADEQ considers these costs to be the responsibility of the COP.

[2]Includes costs for bag filters and LGAC treatment systems, and all treatment plant infrastructure including electric system and controls. However, excludes costs for installing either submersible or turbine style groundwater pumps for two wells at the COP-70/71 site. ADEQ considers these costs to be the responsibiltiy of the COP.

[3]Excludes power costs for operating new well pumps at the COP-70/71 site. ADEQ considers such costs the responsibiltiy of the COP.

[4]Assumes 500 gpm pump at Downgradient System operates 95% of the time w/ average cost of $0.14 per kilowatt-hour for electric power.

[5]Based on avearge of Prominent Systems and Siemens LGAC usage isotherms: 166.3 lbs/day for 500 gpm system (95% operation time) and 249.4 lbs/day for 750 gpm system (25% operation time)

[6]Assumes one injection well will need to be replaced in years 10 and 20. All other periodic costs (pump replacement, 5-year reporting, etc.) are assumed the same for each of the three alternatives.

[7]Capital plus 30 years O&M and reporting, using a 7% discount factor and rounded to 1000.

COP = City of Phoenix
CM = construction management
H&S = health and safety
IWs = injection wells
LGAC = liquid-phase granular activ. carbon
O&M = operation and maintenance
P&T = pump and treat